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PHYSICAL TRAINING OF THE GUARDSMAN.[1]

IF we believe in that ounce of prevention which has already proved itself equal to many pounds of cure, that laconic and logical saying, "In times of peace prepare for war," or, in short, if we believe in the very existence of the guard itself for fulfilling the objects of its original founders as an emergency army; if we believe that no matter how secure we feel, that emergency may come, then anything which will increase the efficiency of the militia in subserving those objects must be of genuine interest to every true guardsman.

The efficiency of anything depends on its being adapted to the best methods required to accomplish the desired end. The efficiency of an army depends on several things. And though we may not agree on the relative importance of the different elements, yet I think all the necessary qualities of an efficient force are included in the following:

1. Able commanders.
2. Thorough theoretical instruction of the men.
3. Thorough physical training of the men.
4. Intelligent men.
5. Actual campaign experience.

Of course the lack of any one of these elements would detract very materially from the efficiency of the force, but of what avail would a

[1] From a paper read before the Iowa National Association, January 12, 1894, at Des Moines, Iowa.

force thoroughly well drilled and thoroughly intelligent, with an able commander at its head,—of what avail would such an army be if the men had not the physical endurance to carry on the campaign? The fifth of these essentials, namely, "Actual campaign experience," is, of course, one which all troops cannot have, and which no recruit possesses. Though the execution of battle formations and movements and sham battles, together with a radically changed system of target-firing, might give to some persons of exceptionally vivid imaginations the real experience, yet the efficiency of the guard, at least, must depend almost entirely on the other four essentials.

It is the province of this paper to speak only of that essential put third in the list, namely, "The physical training of the men," except as the discussion of its points may overlap into the territory of the others,—for there can be no hard and fast distinction between them.

That prosaic change which brought on the era of the world's history when the be-trapped and be-armored knight, who fought his adversary hand to hand, vanished; that time when jousts and tourneys were no more, and the zip of a musket-ball could blot out life in an instant,—that change brought with it the decadence of physical training. Men thought it not worth the while to exert effort in training the body when life could be let out so quickly and easily. "Physical training counts for naught," they said, and that expression has so caught the ears of men that even to-day we must argue that physical endurance *does* figure in the success of military operations. Is it not surprising that MIND should

> "So get the start of the majestic world
> And bear the palm alone"?

But the reaction came at length.

Let us recall the importance the Greeks attached to physical training. Remember that he who was victor in the Olympian or Isthmian games had more honor than kings. Remember that the Lacedæmonians sacrificed everything for the sake of the physical training of the soldiers. Even home-life was given up, and they must feed at the public messes or "syssitia" from the age of fourteen! The Spartan hoplites who fought at Thermopylæ, Platææ, and Mantinea testify to the success of the system.

Do you think it less essential in warfare at present? I think it is much more essential to-day than ever before. When, I ask, in the history of warfare, has so much depended on strategical swiftness, involving often excessive forced marches, and perhaps scarcity of supplies? When does history show us a time when war might be begun and fought to a successful or destructive close in less time than to-day? When, therefore, has there been a time when so much depended on having an army trained to endure physical exertions and trials at the

very outset? Before a raw army could be mobilized the destructive war of to-day would be ended.

Believing these conditions to be true, let us inquire as to our exact position in the case. What beginnings or advances have been made? What chances have we? What opportunities *ought* we to have? What shall we do?

When we remember that "Father Jahn," the first of the Turners, was imprisoned and all the gymnasiums in Germany ordered closed in the early part of the present century; when we bear in mind that the work of Donald Walker, entitled "British Manly Exercises, etc.," the first modern scientific treatise on athletics published in the English language, was issued as late as 1836, we are enabled to see the rapidity of the growth of the proper idea as to the relative importance of systematic physical training in every line. Scientists have pointed out the physical decadence of the race. It is time to command "to the rear, march," and get back to the Greek idea of sound mind inhabiting a sound body. And yet rapid though we may call the movement, it is still too slow.

European countries have adopted systems, and have army training-schools. The United States is yet in arrears. The guard has only what individual effort does, and no more. Even our colleges, which should lead in such movements, are only just beginning to realize the necessity of compulsory gymnasium work for the recluse student. In isolated cases there have been something like a system of calisthenics and light gymnastics in our public schools. What wonder, then, that our army or national guard is provided with no national system of training-schools of physical development, and for contests of prowess, speed, agility, and endurance!

What is, then, the condition of the United States as to the physical training of its military forces? We must answer: There is yet no universal system, no code of exercises sanctioned by the government. The army officer relies for the physical training of his men upon the ordinary drills prescribed in the "regulations," aided somewhat more, perhaps, in the last edition by the change to the seventeen "setting up" exercises. The adoption of these exercises is an admission of the necessity of a more varied system, and they are on the right road,—with the possible exception of the position of the thumbs when the hands are brought to the side. ("Thumbs to the front" throws the shoulders forward. The opposite is the result desired.)

The conditions in the army are very different from those in the guard; the army man can always be kept busy; he can get much of each kind of exercise from his daily routine. Then there are many and varied "detached services." And in all, the physical labor and exertion predominate. Let, then, the army man only be kept erect in bearing and he will develop into a fairly good specimen of a physical

"man," though it must be confessed that he, like most of us, becomes "one-sided;" that is, his exercises will develop his right much more than his left side. With the army man, too, it is not a matter of choice after he has once enlisted. In this, too, he differs from the guardsman. Our militiamen oftentimes get about their only brisk exercise in the five or ten minutes of "setting up" that too few of our company officers give their men in their weekly drills. And it is a fact, only too apparent, in this, as in all else, that the less one does of a thing the less one chooses to do. The result is that many of our guardsmen, who with a little incentive or a little variety in the way of gymnastics would become firmly-muscled athletes, do in reality come to be flabby-muscled, hollow-chested, and, if not lazy, at least averse to routine exercise. The very simplest kind of a gymnasium would work a veritable transformation on the great majority of these same men. For it is a proved fact that the very men who are thus averse become, when the first backwardness has worn off, the most eager of all to get the benefit of the variable but systematic work. From personal experiences in gymnasiums I think I can truthfully say that these men, of all, are most delighted in the variety and at every bit of progress they make. Therefore it stands to reason that this is no compulsory matter; it is simply a matter of equipment, a matter of forcing its proper value upon the authorities that dispense all things.

Another great difference in the condition of affairs between the army and the guard is this: the men in the army average much older than the men in the guard. There is therefore only so much the more reason why we should urge the necessity of providing some system of physical training for our guardsmen. For what class of soldiers or men will be so greatly and permanently benefited by just such a system —not only for making better emergency soldiers, but better *men*—as our self-same guardsmen? "Men" the drill regulations insist that we must call them; but when you look over the enlistment briefs, you will be surprised to discover how many enlisted at the minimum age of eighteen, and many of these were undoubtedly eighteen "on a pinch," as we say. Add to these, then, all those that are under twenty, or even twenty-one, and we see that a very large number of our militiamen enter the service at that critical period when they will become forever either stoop-shouldered, hollow-chested persons or *men* with square, broad shoulders and lots of heart and lung room, and wills that command perfectly their every well-developed muscle! Truly, then, this question of the physical training of our guardsmen is no mere expediency matter; it has a deeper significance than that; it is a matter of vital importance, and one the success of which will result in great permanent and universal benefit to the whole race.

There is this further point. That if a greater variety of movements in drill would lessen the need of a gymnasium, the converse

must also be true, and that is the exact condition of things now, I believe. Every change in the drill regulations was made for the purpose of lessening the technicalities and reducing the whole theory to the simplest possible form. This has certainly increased the necessity for outside exercise.

And now what has been done towards such outside work? Army officers holding advanced ideas on the subject have advocated a government board which should adopt a uniform system of "Gymnasium Regulations."[2] Other equally progressive officers—especially of the medical staff—have said "Amen" to this, and up to date that is the sum total accomplished as to national action.

To quote one writer: "At a few posts something is done. At the recruiting depots there is some systematic instruction." These few posts are those whose commanders recognize that no advance ever came by following the motto, "Let well enough alone." They have overcome "the dread of the initiative, the indisposition to do more than has been done." You will not find among their number he who "forbade his captains taking their companies into the adjacent woods as skirmishers because the gravel parade was intended as a drill-ground;" or the officer who puts himself on record in one of the highest military journals of the country in an article criticising "Our New Drill Regulations for the Infantry" as saying, with reference to the change from four to seventeen calisthenic "setting-up" exercises,[3] "It is not believed that so many are necessary in setting up a soldier. Those practiced so long are enough. . . . The exercises as given in the text are confusing to the instructor," and who then suggests how they might "be more easily taught!"

But what about the systematic instruction at the recruiting depots which he mentions? Is it possible that they recognize what *should be*, and use the ideality to entice innocent flies into their spider-webs at recruiting stations?

What does he say is the difficulty in the army? "The difficulties in our way," he says, "are lack of trained instructors, although these *should* be easily supplied from the ranks, but particularly lack of interest in officers whose attention has not been awakened. An intelligent interest must be awakened in those who have the authority."

Although as a general thing the army should lead and the guard follow, yet I can see no good reason why, when a thing has been tried and found not wanting, as systematic physical training has been, not only in the army organization of the Old World, but wherever and for whatever it has been tried; when an hypothesis has become a fact, and when our regular army authorities then still hesitate, I can see no valid

[2] Lieutenant F. E. Harrison, Mil. Ser. Inst., vol. xiii. p. 951. (An excellent and thorough article.)

[3] Lieutenant C. J. Crane, Mil. Ser. Inst., vol. xiii. p. 1148.

reason why the guard authorities should do likewise. Many more wonderful things happen to-day than that the guard should take the initiative in the matter of systematic physical training for its officers and men. Let the guard act in the matter. Perhaps we need it more than the army. I think we do. If by the simplification of the drill regulations our guardsmen find it unnecessary to become "theoretical automata," and are enabled therefore with the minimum amount of drill given in the guard service to know something of the theory of soldiering, is there not something more which can be done to increase the efficiency of the emergency militia? Yes, I believe there is, and congenially, too.

Let us attend to the physical development of the men. Let us have a gymnasium, simple though it be, at every company post. Let systematic instruction be furnished. Let us have athletic contests of all kinds between our companies,—in-door contests in winter, out-door field-day sports at camp in summer, and Rugby foot-ball games in the fall. Now this may seem like a formidable array of recommendations, and one entirely impracticable on account of time. But I can assure you that it does not occupy an extraordinary or even a great amount of time,—no more time than any man who expects to keep good health by proper exercise should give to it. And I *sincerely* believe it practicable. And I think I can say with some assurance that by the end of the present year its practicability will have been proven in our Iowa guard.

And though the gymnasium is the chief means to the desired end, —and I will speak of it soon,—it is to get much of the out-door work that I would urge upon our guardsmen who are clerks and in-door laborers. They stand in most need of that. The out-door man is after all the man of large soul. The soul is certainly affected by its surroundings. Just as the man who shuts his existence up within the four walls of an office cannot help but become crabbed, so will the soul whose confines are the sunlight of day and the starry heavens by night certainly expand into harmony with its surroundings. If there were no further direct or indirect reasons for infusing a love of athletics into our guardsmen, I should certainly not hesitate to call that alone sufficient. What better reason can be urged than one which will make men manly, larger-hearted, and greater-souled in all things? When we remember that in this or any civilization war is never an ultimate end, what system can be better than one which combines an education for the nobler ultimate end, with the expediency training towards the immediate object?

Our guardsmen certainly need systematic and progressive physical education. What they stand in greatest need of is exercise that will give them plenty of "heart and lung room," which Archibald Maclaren's English system gives in such wonderful quantities to the inferior English recruits as to make the finished soldier frequently sur-

pass our own regular in endurance. What our guardsmen want is that which will give them that same endurance.

What must and should this training be? First of all, it must be progressive. It must begin with the simple and easy and lead by gradual steps to the complex and more difficult. Next, it must be all around in its character; it must develop all parts of the body proportionately. It should be such as to cultivate activity and dexterity, rather than brute strength with clumsiness. It should be such as to develop a man's quickness of perception and his ability to act quickly, correctly, and self-reliantly on the spur of the moment. It should be —what every drill should be—a system that is instructive, that is, helpful in attaining the end desired, and not a confusing system. It should be a system that has sufficient variety so that there would be no drudgery,—it *can* be made entirely free from it. It should be a system in which there is always something yet unattained, for there is nothing that stimulates like advances coupled with attainable objectives still far in the distance. It can be thus. The system of progressive physical training which is advocated combines all these qualities. There is the almost infinite amount and variety of in-door work, and there are the out-door contests almost as varied.

There is nothing that serves so much as an incentive to work, whether it be in the business life or in athletic training, as the knowledge that a contest is to come. The most excellent in-door contest I think is called the "Pentathlon," consisting, as the name implies, of some five events, in which every man gets credit for just what he accomplishes. The plan is this: There are five events, say (1) a sixty-yard potato-race; (2) a running high jump; (3) "chinning;" (4) a hitch-kick or pole-vault, and (5) a half-mile run. In each event there is a low qualification mark set, and the contestant scores so many points for each second, time, or inch he beats such qualification. The man who scores the greatest total in *all* the events is the winner of the medal. Thus, a man must be a good all around man, or even if he score well on one event but "fall down" on another, some man of mediocre talents all around will surpass him. As an illustration which may show how much our guard boys or "men" need exercise,—and I think our guardsman no weaker or poorer than the average young man of his age—rather perhaps it should be and *is* the contrary,—as an illustration of the need, let me cite the difference in the record made in the first one of such contests held by the students of the Iowa University and the one held by Company G of the Fourth Regiment, Iowa National Guard, a little later. The winner in the college contest scored 382⅝ by the system of marking, while the winner of the Company G contest scored less than one point more than half as many, or only 192 points!

Of other games, perhaps the most popular as well as easily learned are "three deep," basket-ball, and in-door base-ball.

What now as to the out-door contests,—the *summum bonum* of all athletic work? Can we have them? Can the guardsmen find the time? I say yes. I think that a guardsman can find time for such out-door contests. For he has no special need of much daytime in which to train,—his evening gymnasium "all around" work is sufficient. And as for time to contest, I think many a dull day during the summer season the employer will be but too willing to allow time for an afternoon of field-day sports. Then should come the grand culmination of these contests in a regimental field-day at camp.

Now, what should such a regimental field-day comprise? I think it should contain besides the ordinary events of running, jumping, weight-throwing, and vaulting, some contests of the fully accoutred soldier. Perhaps some event on the plan of the German obstacle race, in which the contestant, loaded down with musket, blankets, overcoat, and haversack, jumps ditches, scales mounds, and vaults fences on the obstructed course. Besides this I think there should be one race of about five miles to thoroughly test the endurance of the men. A regimental field meet cannot help but awaken an interest in athletics.

Shall we have foot-ball contests between the companies of the guard? Again I say yes, by all means. And I do not intend here to argue the question of fatal accidents or liability to injury in that game, nor to figure out to you how small the per cent. of accidents is when we know the large number engaged, but will depend on these points being presented in current discussions to your entire satisfaction after the gore of the reporters' pen, fresh from the field of excitement, has been allowed to dry, and will only state that many of the most excellent authorities consider "Rugby" foot-ball as the *par excellence* of games, which imbues the contestant with self-reliance, a quick wit, nerve, and good control of the muscles, and temper as well. Let us have more foot-ball games. They will bring revenue into the depleted company treasury; they will bring enthusiasm into the company's ranks.

And that suggests to me what I consider one of the chief benefits of the entire system, and that is the increased enlistment that would naturally result. I am not a guardsman of many years' experience, but I have learned that a general question is, "How do you keep up the enlistment?" What would be a more powerful aid to the recruiting committee than a guard service possessing all these advantages? Really, the advantages of physical training are not single,—they are multiple, they are cumulative.

But now comes the question, How are we to get the gymnasium? Or, having the gymnasium, how are we to pay the janitor and running expenses? How are we to receive the pay for the necessary instruction?

First, how to get the gymnasium. An assessment of ten dollars on each member of the company of forty-five men will produce a fund of four hundred and fifty dollars to start with, or less as the company

may be able to stand. Perhaps the plan we followed, of voting our *per diem* for annual camp service, might be better and sufficient. Let it be understood that this is simply *paying* bath and gymnasium privileges in advance; that is, it is a "value to be received," investment, and *not a donation.*

If the necessary amount can be raised within the company, that is of course best, but if not, then there are certainly liberal business men in every city that has a company who will take out "honorary memberships" in the company at ten dollars per annum whether they wish the privileges or not. Besides the number of these there are younger men who, while not members of the company, will be glad to pay ten dollars per year for gymnasium and bath privileges, especially after having once known the benefit and pleasure to be derived. And even besides these there are some of the younger boys,—those between twelve or fifteen and eighteen,—who will be good militiamen in time, who are anxious to come into the gymnasium on reasonable terms. More than this, if a competent instructor is secured, there will always, I think, be a large number of young ladies who are not only much in need of this very exercise, but also very willing to take it if the opportunity is presented. Of course some few lighter apparatuses will have to be put in for such classes, but they are inexpensive.

I think the above is no visionary plan. It is not meant to be. It is set forth as a plan meant to be extremely practicable. It is a plan most of which has been successfully tried, and which *can* therefore succeed again. It is suggested with the fond hope that it may often be tried again. For the good of every guard company in Iowa I hope they will try it, and that they will succeed in it.

But, lastly, how are we to get the instruction? Shall the companies also be forced to bear that expense? Perhaps there is a limit to the elasticity of the company purse.

And where are the instructors to come from? There are men in the guard who are competent instructors (and I know of two in my own company) who could perhaps be secured for a couple of months each year, at say a salary of fifty dollars per month (the company paying boarding expenses), to teach the officers and non-commissioned officers, or any who are most competent in the companies, enough, so that with a little extra labor and with the assistance of code-books they would be enabled to conduct the work progressively for the balance of the year. These men can be found in the guard and out. If the guard cannot afford to hire instructors direct from the Springfield training-school, they can at least hire those who have had competent instruction under the graduates of that excellent institution. Allowing a hundred dollars per annum to each of the forty-eight companies in the State for such instruction, it would require in round numbers an appropriation of five thousand dollars to carry it into

effect. Or perhaps an appropriation might be made and distributed according to the biblical principle that "to him that hath shall be given;" that is, where the companies have sacrificed enough or labored enough to get a gymnasium the State will also help those that have thus helped themselves, and give to them one hundred dollars per annum for instruction. This is not a new system of distribution to the guard,—we now receive our ammunition on the same principle.

But in all seriousness,—though there are certainly very many things that the National Guard of Iowa yet needs and needs badly,—when you consider the real importance of having your emergency soldier a good, sound, strong, enduring soldier, when you consider the multitudinous direct and indirect benefits that must accrue from such a system, when you consider that such a measure will put more young men in the enlisted service where it *can* benefit them, when you remember that after all the emergency soldier or any other soldier is no ultimate factor in our government or civilization, but simply a means for securing better things to ourselves, when you remember, then, all these things, I ask you all candidly and in sincerity, Would not an additional appropriation of five thousand dollars for such an object be eminently and extremely beneficial?

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NINETY-DAY MEN OF '63.

In May, 1863, when the rebel army then fronting the Union lines along the Rappahannock silently withdrew and rapidly struck out for the valley of the Shenandoah, much speculation was indulged in as to its objective-point, but before long grave apprehensions arose as to the safety of Washington and Baltimore, and even Philadelphia.

As a precautionary measure—a preparation for the worst—the Secretary of War on the 9th of June established two new military departments,—that of the Monongahela, under Major-General William H. Brooks, formerly of the Tenth Corps, with head-quarters at Pittsburg, and that of the Susquehanna, under Major-General Darius N. Couch, formerly of the Second Corps, with head-quarters at Harrisburg.

These officers were authorized to organize departmental corps, and on assuming command General Couch issued an order calling upon the people of Pennsylvania to volunteer for short service in the "Army Corps of the Susquehanna." On the 15th of June, President Lincoln issued a proclamation and General Order No. 43, calling for "fifty thousand men from Pennsylvania to serve for six months, unless sooner discharged," and fifty thousand more from Ohio, Maryland, and West Virginia. Governor Curtin at the same time issued a proclamation urging immediate enrollment and every effort to stop the advance of the enemy.

In Philadelphia the formation of a number of regiments was commenced immediately upon receipt of the call; but the men of a class comprising bankers, merchants, lawyers, doctors, and manufacturers, while ready to do any service, make any sacrifice during the grave crisis then existing, declined to be sworn and tied up for six months, or even three months; consequently a brief hiatus occurred in the enrolling till, on the 18th, Governor Curtin assured such short-service men as had been enrolled that "they would only be kept in service so long as the emergency lasted," saying further, "I have kept faith heretofore with the volunteers, you can trust my promise now," and he telegraphed to Colonel Thomas, of Philadelphia, then organizing the Twentieth Regiment, "Have your men mustered for the *present emergency*. I will as governor determine the date of their return."

On the 20th the governor telegraphed to Colonel Moore, at Phila-

delphia, "The troops may elect, upon muster into the United States service, to serve for six months, three months, or during the present emergency." Up to the 26th of June all short-service men were formally mustered into the United States service. They comprised eight regiments numbered as below, mustered for the "emergency," their date of muster and discharge and periods of service being shown in the table:

Regiment.	Mustered.	Discharged.	Days of Service.
Twentieth	June 17.	August 10.	54 days.
Twenty-sixth	June 22.	July 30.	38 "
Twenty-seventh	June 19.	July 30.	41 "
Twenty-eighth	June 24.	July 27.	33 "
Twenty-ninth	June 19.	August 1.	43 "
Thirtieth	June 20.	August 1.	42 "
Thirty-first	July 30.	August 8.	9 "
Thirty-third	June 26.	August 4.	39 "

General average of service, thirty-seven days. These were supplemented by two batteries of artillery and one troop of cavalry. The aggregate strength of the United States mustered militia was seven thousand and sixty-two officers and men.

Though the rebel army of seventy thousand men and two hundred and fifty guns crossed the Potomac on the 24th and 25th of June, their crossing was not fully known till the 26th, the impression being that a portion only of Ewell's corps had crossed. When it was evident that Lee was determined upon a supreme dash upon Washington, Baltimore, or Philadelphia, the entire State of Pennsylvania was aroused. Governor Curtin on the 26th issued a proclamation calling for sixty thousand men to serve for "ninety days, unless sooner discharged," and within ten days twenty-eight ninety-day regiments and a number of batteries and troops of cavalry were mustered into State service under this call. The greater part were rendezvoused and mustered within the Department of the Lehigh, at Camps Muhlenberg and Hiester, near Reading. The assembling troops there coming under the orders of a lieutenant-colonel of the Third Cavalry, aide to General Couch, Secretary Stanton subsequently sent General Franz Sigel to take command of that district. The writer yet possesses his original journal recording some of the forcible and characteristic remarks made to him by the rough-spoken colonel when the writer strenuously objected to uniting his gilt-edged company with an Irish regiment of coal-miners, as, "God damn you, what are you here for? If you don't go into that regiment before noon, God damn you, I will put you where you will be a damn sight worse off." These regiments, numbered the Thirty-second and consecutively from the Thirty-fourth to the Sixtieth, were mustered between June 26 and July 6, all being discharged by the 29th of August, the general average of service being forty-five days.

Those of the men not ex-soldiers of the Army of the Potomac had nearly all served in Maryland in the militia division of General John F. Reynolds during the Antietam campaign of the previous summer of '62. The men were borne on State muster-rolls, but were sworn, as particularly emphasized by the mustering officers, "to obey the orders of the President of the United States and whatever officers he should set over them." These twenty-eight regiments were supplemented by five ninety-day batteries of artillery and three ninety-day troops of cavalry. They existed under authority of the President by his proclamation of June 15 and General Order No. 43. The thirty-eight regiments of ninety-day State troops did exactly the same work as the eight regiments serving under United States muster, and served a longer period of time.

The Corps of the Susquehanna, without regard to details of muster, morally and physically backed up the Army of the Potomac by its strength of thirty-eight thousand men under complete organization, and had the three-year troops been defeated at Gettysburg,—and they had a close shave on the second day,—or had Meade attacked Lee at Williamsport, as at one time contemplated, the Susquehanna corps would undoubtedly have been put into the fight without regard as to conditions of muster. The events of the early service of the Pennsylvania Reserves would have been repeated, that superb corps being at first a State militia force, organized in May, 1861, after the Secretary of War declined to accept ninety-day troops beyond the fourteen regiments, the quota of Pennsylvania. The Reserve Corps as organized consisted of thirteen regiments of infantry, one of cavalry, and one of artillery, and in conformity with the act of Legislature they were "mustered into the service of the State for organization and instruction for the defense of the State." They had not been a month in the State service when, *without* United States muster, the Fifth, Colonel Simmons, and the Thirteenth (the Bucktails), Cononel Thomas L. Kane, were taken into Maryland and West Virginia, and with the Eleventh Indiana went into action at Romney, Piedmont, and other points, afterwards returning to Harrisburg. Soon after the disaster at Bull Run occurred, and the national government finding itself without the command of the necessary reinforcements, called upon Governor Curtin for the services of his State army. They were so imperatively wanted that they were sent forward to Baltimore and Washington, many without waiting the formalities of United States muster, being mustered after arrival at destination.

The enlistment of the Reserves was a most fortunate thing, affording just the relief needed after the disaster at Bull Run, and so would the organization of the Army Corps of the Susquehanna have been had the Union army been defeated at Gettysburg. The wisdom of the Secretary of War in forming the corps of the Susquehanna and

Monongahela would have been made very clear. In 1862, during the Antietam campaign, twenty thousand Pennsylvania militia served in Maryland under command of General John F. Reynolds, and though at that time far less effective than in 1863, they received the hearty thanks of General McClellan, who, after the battle of Antietam, wrote to Governor Curtin, saying, "the moral support rendered my army by your action (militia) was none the less mighty."

The Pennsylvania ninety-day troops of the army corps of the Susquehanna numbered thirty-one thousand four hundred and twenty-two, and of the Monongahela five thousand one hundred and sixty-six. To the Susquehanna corps was added six thousand three hundred and eighty-five militia from New York, five hundred and two from New Jersey, and all three-years' troops not assigned to Potomac corps then in the two military districts, the whole making the strength of the two corps over forty-five thousand. This force of men, half old soldiers, formed a back-log of untold value as a reserve to the army of Meade, for in numbers they were equal to half of the entire Army of the Potomac, and four-sevenths as large as the invading army. Fully uniformed, provisioned, and armed, excepting a deficiency in artillery and cavalry, thoroughly divided into brigades and divisions under experienced general officers, assisted by staff officers of tested capacity, the rank and file composed of earnest men stimulated by the most intense spirit of self-defense, these corps formed an army capable of noble deeds, and to the command of which any man might have aspired. Some of the ninety-day regiments crossed over into the two Virginias, others into Ohio, while others served along the Potomac at Berlin, Falling Waters, Williamsport, Dam No. 5, and Hancock.

With few exceptions the militia was not brought into mortal conflict, but they were down along the Potomac to do as ordered. If called to go into action they would have acquitted themselves well, as was proved by the close work of the Twenty-sixth Militia at Chambersburg, on which occasion it lost seventy-two men captured, and by the defense of Columbia Bridge by the Twenty-seventh Militia, these men, without artillery support, standing to their work for three hours under the fire of two thousand five hundred of Early's veterans. The Philadelphia Emergency Battery of Spencer Miller on several occasions acted like veterans, and had it not been for the efficient service of the Fifty-fourth, Fifty-fifth, Fifty-seventh, and Fifty-eighth Regiments of ninety-day men of the Monongahela holding the fords of the Ohio River at Blennerhassett and points above in West Virginia, General Morgan and his raiders would never have surrendered on the 26th of July, but gotten off with much *éclat*. All other regiments of the two corps did efficiently whatever duty was presented to them, demonstrating that confidence could be placed in the hastily-mustered troops. And why not? for nearly all of the officers had seen service in the

Army of the Potomac, and fully one-half of the men. In the regiment of the writer every officer of field and staff had held command in the Army of the Potomac, and also two-thirds of the line officers, while fully one-half of the men had served with McClellan on the Peninsula; they took to field duty and habits like ducks to water.

The thirty-sixth thousand Pennsylvania militia, of which seven thousand and sixty-two served under United States muster, were all in equal service and amenable to the same military regulations. Had privates of the State militia been captured, they would have been either United States soldiers or pirates, for one State cannot make war on another, nor can one State invade another. The officers of the State mustered troops, as well as those mustered in the service of the United States, served under commissions stating that they had been mustered into the service of the United States. The United States Pension Office, Congress, and the United States Supreme Court has clearly placed on record the status of the ninety-day militia by pensioning equally those ninety-day men who served under United States or State muster.

Two of the men of the company of the writer, before their decease, drew pensions for injuries received near Falling Waters, but their captain has been refused admission to the Loyal Legion because of informality of muster. It is ridiculous to claim any practical distinction because of the technical conditions of muster; both were clothed, fed, paid, and armed by the United States. Their general officers were of the United States, and they served beyond the border of their State, not under their own governor or State officers.

The same conditions applied to the State mustered militia of Missouri and Kansas. The authorities of Ohio, at the close of the service of their ninety-day State mustered troops and immediately before their discharge, had their men mustered into the United States service; thus by a stroke of administration the Ohio militiamen of '63 seemed to be of a better record than the Pennsylvania ninety-day men.

While the primary object of this article is to partially record the history of the Pennsylvania ninety-day troops, an incidental opportunity occurs to attempt to make clear the basis of claim of the officers of the two corps for admission into the ranks of the Loyal Legion. The writer, a captain in the Forty-third ninety-day regiment, as do all others of the one thousand officers of the ninety-day troops, holds a commission from Governor Curtin dated the 4th of July, 1863, clearly stating that he was mustered into the service of the United States under the President's proclamation of the 15th of June, 1863, and General Order No. 43. Ordinary State military commissions could have been given out from the State adjutant-general's office, but it was thought best that the ninety-day officers should hold commissions clearly indicating United States muster and authority in case of any complications or of their

capture. The writer, in 1889, was turned down by the Legion as not having been mustered into the United States service, and feels that a great injustice was done him and about three hundred other officers out of the one thousand; the seven hundred being eligible by reason of previous services in long-term regiments. These three hundred, if they did not lay down their lives or shed their blood, were ready to go wherever ordered by whatever general officers the Secretary of War might happen to set over them. In the rush and turmoil of war times, when nothing seemed of merit except a sacrifice of blood, it may have been natural to look with indifference upon the organization of the two corps, but now after a lapse of thirty-one years the forethought of President Lincoln and his advisers can better be appreciated in the organization of the corps of Generals Brook and Couch, which events might have proved to be of value beyond any possible computation.

While not for an instant disposed to say anything derogatory of the average quality of the three-years' Pennsylvania volunteers who formed one-seventh of the Union army, for there were none more loyal, none more valorous, and none more uncomplaining, it will be quite admissible to refer to the superior standing of the ninety-day men. They were the best in the State, professional men, merchants, and manufacturers, who left their business pursuits under a few days' notice and under conditions of the greatest emergency, not to go on a picnic, for it bore all the aspects of a sanguinary campaign. Never did men more deliberately enroll for what appeared an immediate fight. Had Gettysburg been lost they would have passed through a succession of most bloody conflicts. No army corps of thirty-six thousand ever before in the history of the world represented so much intelligence, wealth, social position, and practical ability as the ninety-day Pennsylvania militia of 1863.

BURNET LANDRETH.

LORD WOLSELEY'S MARLBOROUGH.[1]

It has for long been known that Lord Wolseley has been engaged upon a life of Marlborough, and that he has had access to all papers and private documents connected with the career of that great man. The appearance of the work has, therefore, been looked for with much interest; and the two first volumes of it,—which are now before the public,—although they relate to the first half only, and that the darkest one, of that varied story, will fully bear out the high expectations formed in regard to it.

There is no life of Marlborough approaching it in dramatic interest, minuteness of detail, and excellence of literary execution. Much as we had always admired Lord Wolseley's great talents, we had no conception before of his power as a writer.

There is so much of novelty, so much of interest, in the work, that it is a very difficult one to review; and we can only pretend, by a few extracts, to give a general idea of the great value of its contents.

In the early part of the first volume there are many interesting anecdotes illustrative of the state of society, and especially of female society, in the middle of the sixteenth century. To these we will presently allude.

Speaking of the old home of Ash, Lord Wolseley says,—

"Standing on these garden steps, the threshold of Marlborough's forgotten birthplace, what heart-stirring memories of English glory crowd upon the brain! Surely the imagination is more fired and national sentiment more roused by a visit to the spot where one of our greatest countrymen was born and passed his childhood, than by any written record of his deeds. This untidy farm-house, with its neglected gardens and weed-choked fish-ponds, round which the poor, badly clothed boy sported during his early years, seems to recall his memory —ay, even the glory with which he covered England—more vividly than a visit to Blenheim Palace, or a walk over the famous position near the village of Hochstadt, on the banks of the Danube. The place, the very air, seems charged with reminiscences of the great man who first drew breath here" (i. 11, 12).

[1] Reprinted from *Blackwood's Magazine* by permission of the Leonard Scott Company of New York, American publishers of *Blackwood*.

Lord Wolseley draws an amusing picture of female virtue at this time,—

"There is a wide gulf between our standard of female virtue and that of the Restoration epoch. This is brought home to us by the fact that an upright, God-fearing gentleman like Sir Winston Churchill should have wished to see his only daughter established as a maid of honor at a court where Charles II. was king. But in those days it was no slur upon a lady to become the mistress of a prince; nor did her family suffer in reputation. Lord Arlington, in a letter of advice to the beautiful Miss Stewart, refers to the position, which he thought she had accepted, of mistress to Charles II., as one to which 'it had pleased God and her *virtue* to raise her.' It is said that the parents of Louise de Kéroualle, Duchess of Portsmouth, sent her originally to Versailles, in the hope that Louis XIV. would thus favor her. Sir E. Warcup records with pride, in one of his letters, that his daughter, a maid of honor to Queen Katherine, was one night and t'other with the king, and very graciously received by him. The mistress to a royal prince was courted by all who had access to her. Other women envied her good fortune, and her family looked upon her as a medium through which court favors, power, and lucrative employment were to be obtained. In allusion to the statement that Marlborough owed much of his success in early life to his sister Arabella, Hamilton, who knew thoroughly the French and English courts, writes, 'Cela était dans l'ordre.' In common with others of his time, he assumed that the favorite of the king's mistress, and brother of the duke's mistress, was in a fair way to preferment, and could not fail to make his fortune" (i. 35, 36).

No one will understand this period who does not realize this remarkable, but true, picture of female virtue in the upper classes then. As Lord Wolseley says farther on, "Modesty, the old outward sign of feminine virtue, was no longer reckoned an inward grace, and even regard for common decency was stigmatized as prudish. Chastity was held up to scorn, and faithless husbands made faithless wives."

It so happens that all the incidents in Marlborough's life which are of a shady character, and which have been greedily seized upon by that numerous class whose delight it is to blacken the character of great and public men, occur within the period embraced in these volumes.

Lord Wolseley has most carefully gone into all these incidents, and, while anxious to do the best he can for his hero, has always stated the facts as they appear against him with scrupulous impartiality.

The charges against Marlborough are four. The first is that he accepted money from the Duchess of Cleveland, the king's mistress, with whom he had an intrigue; the second, that he deserted James; the third, that he was a traitor to William; the fourth, that he disclosed to the French the plan for Tollemache's attack on Brest.

It will be most convenient to examine these charges in succession.

We will first give Lord Wolseley's picture of him as a young man. Marlborough, he says,

"Was tall, and his figure was remarkably graceful, although a contemporary says, 'Il avait l'air trop indolent, et la taille trop effilée.' His bearing was noble and commanding, and one who particularly disliked him tells us that 'he possessed the graces in the highest degree, not to say engrossed them.' He adds that his manner was irresistible either to man or woman. The truth was, he knew how to be all things to all men. Kings, courtiers, and private soldiers alike were captivated by his gentle demeanor, his winning grace. He understood court life thoroughly, caressed all people with a soft obliging deportment, and was always ready to do good offices."

Such being the man, it is not to be wondered at that he soon became the intimate friend of the exquisitely beautiful Barbara Palmer, Duchess of Cleveland, one of King Charles's many mistresses. Of her Lord Wolseley says,—

"She was the most inconstant of women, and had lovers of all degrees, even whilst openly recognized as the king's mistress. She was a gambler and a spendthrift, imperious in temper, and far from wise. Her cousin, Mrs. Godfrey,—sister of Marlborough's mother,—was the governess of her children by the king, and is said to have designedly thrown her handsome nephew, John Churchill, in her way. The result was, as anticipated by the lady, an immediate intrigue between them" (i. 68, 69).

I. Having now cleared the way and put the pieces on the board, we come to the first charge against Marlborough, which is thus stated by our author,—

"Churchill spent the winter (1673) at home, and again fell a victim—doubtless a willing victim—to the wiles of his kinswoman, the Duchess of Cleveland. Extravagant in her style of living, she squandered on every passing whim the large sums of money bestowed upon her by the king. Her young lover, Jack Churchill, was poor, and she is said to have been most liberal to him. She had purchased for him the position of Gentleman of the Bedchamber to the Duke of York, and is supposed to have now bestowed upon him, as a new mark of her affection, the sum of £4500; but the authority for this statement is the Earl of Chesterfield, who never lost a chance of repeating any gossip that told against the fame or reputation of the man whom he disliked. But whether the duchess did or did not supply the money with which the annuity was purchased in 1674, it is certain that Churchill came in possession of it about this time. The ordinary courtier of the period, who had suddenly found himself in possession of so much money, would have gambled with it, or spent it on some form of pleasure. But this strangely-constituted young man was

already thinking more of the future than of the present. Bitter experience had taught him the miseries of poverty, and he determined to purchase an annuity, so that, come what might, he should at least feel himself above the daily sting of want. The money was accordingly handed over to Lord Halifax, who, in consideration thereof, settled £500 per annum upon him for life. . . . Want of money had engendered in Churchill that strict attention to economy from which parsimony is so often bred. Long-practiced frugality degenerates easily into pénuriousness, and that again into miserly habits of avarice. It did so in this case" (i. 131, 132).

Having now clearly stated the case against Marlborough, Lord Wolseley takes up his defense thus:

"Books have been written with the express purpose of proving that, however great Marlborough may have been, he was a monster of ingratitude, and only rose to power by low and infamous methods. That he should take money from the woman he intrigued with is often denounced as the worst and most ignoble action a gentleman could be capable of. But this was not the opinion entertained of the transaction by his contemporaries. It was regarded as quite natural that a handsome young soldier should be selected by the mistress of the king as one of her lovers, and that, penniless as he was, she should make him large presents. . . . Throughout this intrigue with Barbara Palmer, he did nothing more than was done by many others,—by Monmouth, for instance, who, when an exile, lived chiefly upon the bounty of his mistress, Lady Wentworth. Yet Monmouth has not been held up to everlasting obloquy. No English gentleman of to-day would act as Marlborough and Monmouth did; but their conduct was not regarded at the time as either disreputable or unusual, and it is by contemporary law and custom that we must judge them, and not by our own code of morality and honor" (i. 132, 133).

This is the best excuse that it is possible to make for Marlborough's conduct on this occasion, but we cannot consider it satisfactory. It implies a complete inversion of the position of the sexes to one another; and it ever must, at any time and in any age, have been a most degrading thing for a gentleman to assume the position of a paid prostitute.

II. We come now to the second charge against Marlborough,—that he deserted James.

"This," says Lord Wolseley, "was the great turning-point in his life. Actuated by lofty motives, and in what was to him a sacred cause, he was breaking away from the patron of his boyhood, the friend of his mature years. He, a cavalier, was becoming a traitor, in the common acceptation of the term, and throwing in his lot with his king's greatest enemy. James and Churchill alike suffered for their steady adherence at this epoch to the faith that was within them.

One lost his crown, and died in exile, the despised dependant upon the bounty of a foreign sovereign; and the other, though he lived to be the foremost man in Europe, died detested and vilified by the nation which he made great and famous" (ii. 42).

Upon this point Lord Wolseley's opinion is that, as a soldier, Marlborough's conduct was utterly unjustifiable, but that, as a statesman, he acted for the good of his country.

"From a military point of view, it is impossible to acquit Marlborough of desertion in 1688. Although he was not then in James's confidence, and held no military command, still, as a favorite of many years' standing, and as a courtier who had been most in his secrets and had been promoted by him to high honor, we must be painfully impressed with Churchill's ingratitude and heartlessness. His conduct was in the highest degree treacherous and deceitful, and it is revolting to think of him and other officers traveling with James from Windsor to Salisbury, and showing him all outward marks of loyalty and obedience, while they were in league with his enemies to betray him on the first favorable opportunity. To hold daily converse with the man whom they were seeking to destroy, and to act towards him as if they were still his faithful servants, implies a depth of baseness and treachery which are all but diabolical.

"It must be freely admitted that during the ten years between 1688 and 1698, Marlborough's career was sullied with acts which in the present day would place him beyond the pale of society, and which furnished Swift and Macaulay with ample materials for condemning him. But the real question is, Had Marlborough the public good in view when he deserted James, or was his conduct inspired by motives of personal ambition?

There is no practical standard by which the conduct of great men of action can be measured. Patriot leaders have generally been unscrupulous as to the means they employed to secure their aims. Thus, without attempting to extenuate or excuse the gravity of his military crimes, the point to be considered is, whether in a supreme national crisis his duty to his country did not outweigh and override his duty as a soldier? In 1688 Marlborough was something more than a mere soldier owing military obedience to his Sovereign in all things. He was a power in the country. The time was one of intense excitement, religious as well as national. The forces were evenly balanced, and Marlborough's influence, into whichever scale it should be cast, would decide the issue. The question he put to himself was, Should he remain faithful to James, and rivet, perhaps forever, the yoke of despotism and Popery upon the neck of the English people, or should he, by transferring his allegiance and service to William, set them free?

"As I read history, England owes him a debt of gratitude for the calculated deceit which marked his desertion, because it enabled

William to accomplish his carefully-planned plot without bloodshed. Had Marlborough stood by James as Feversham did, the Revolution could not have succeeded, if indeed it would have been attempted; and beyond all doubt he fully appreciated the gravity of the step which he was about to take" (ii. 82, 83).

We have quoted Lord Wolseley's remarks upon this, the most important act of Marlborough's life, in full, because we have never seen the case so clearly and incisively stated, and so justly: in no way palliating his infamous and treacherous conduct as a man, but pointing out the political advantages it conferred upon his country. Happy are those who live in times when they are not called upon to choose between such divergent courses.[2]

III. We now come to the third charge against Marlborough,—that he was a traitor to William.

This seems to be clearly established. Lord Wolseley says,—

"As early as January, 1690–91, Marlborough wrote to James to implore his forgiveness and to assure him of his future devotion and loyalty. Whilst William was absent in Holland struggling with selfish, short-sighted allies to arrange a common plan of campaign against France, Marlborough, Godolphin, Halifax, Russell, Mordaunt, Sunderland, Caermarthen, and Shrewsbury all began to intrigue with James. They expressed heartfelt contrition, and begged for pardon, and Marlborough especially seemed sincere in his repentance. He strove to persuade James that he was truly sorry for his past conduct, and endeavored to make him believe that he sincerely wished to see him restored to the throne. . . . In this treasonable correspondence Marlborough professed to regard his past conduct towards James as so reprehensible that he did not ask to have his confidence or to share Jacobite secrets. He only humbly begged to be made use of in any way that his former master might deem advisable" (ii. 227, 228).

In spite of all this, Lord Wolseley is of opinion that Marlborough never seriously desired to see James established again in England, but merely sought to hedge against the contingency of the exile's restoration. Yet James, writing in 1691, says in his memoirs,—

"He [Churchill] laid open that Prince's designs both by sea and land; which, concurring with what the King had from good hands, was a great argument of Churchill's sincerity" (ii. 229).

Lord Wolseley thinks that James was never really convinced of Marlborough's repentance; but that,—

[2] A more severe view of Marlborough's conduct at this time is taken by my father, Sir Archibald Alison, in his "Life of Marlborough." He points out that what was most unjustifiable in Marlborough's conduct was his retaining his position and places when he took this step. Had he laid these down first, and then, as a private individual, joined William, no one could have blamed him.—See Alison's "Life of Marlborough," i. 12–17.

"Although the poor exile did not believe in Marlborough's protestations of penitence and loyalty, he was not in a position to reject any proffered aid. The result was, that he gave both Marlborough and Godolphin a full pardon in his own handwriting, and Mary of Modena indorsed it with a few pleasing sentences. Marlborough, having thus secured what he had so basely plotted for, felt that, come what might, he was at least safe from the block, and his children from poverty. In the following month he declared that he was the most penitent of men. He enlarged upon the sincerity of his remorse for 'his villainies to ye best of kings, and y^t^ it would be impossible for him to be at rest till he had in some measure made an attonement by endeavouring (though at the utmost peril of his life) to restore his injured Prince and beloved Master.' He wrote to James 'that he was so entirely to his duty and love to his Majesty's person, that he would be ready with joy upon the least command to abandon wife, children, and country to regain and preserve his esteem'" (ii. 230).

What a picture of plotting and treachery this is! How sad it is to see a great man come down so low!

IV. We come, lastly, to the fourth of the great charges against Marlborough,—that he disclosed to the French the plan for Tallemache's attack on Brest, thereby causing its failure with heavy loss. Lord Wolseley thus states the case:

"This [1694] was the year of our disastrous repulse before Brest, for which Marlborough has long been held primarily responsible. For nearly two centuries it has been repeated as an historical fact that the destination of the expedition sent against the place was first betrayed by Marlborough to St. Germains, and that it was in consequence of the information given by him in a letter of the 4th May this year that Louis XIV. placed Brest in the condition of defense which caused the attack to fail. In considering this charge, it is essential that the reader should remember its wording. The charge is not merely that he communicated with James upon the subject before the attack came off,—for of that there is no doubt,—but that he was the *first* who did so, and that it was in consequence of the information he gave that the French king had Brest so well prepared that the attack upon it was repulsed with great loss to the English. If, therefore, it be conclusively proved that the preparations were the result of information obtained by Louis from others previous to the date of Marlborough's letter, then this charge falls to the ground" (ii. 304, 305).

What led to the Brest expedition was this. After the battle of Cape La Hogue, the French fleet kept within its fortified harbors; but single ships of war and privateers were frequently sent out to prey upon our merchantmen, and they made great havoc of our English commerce. To stop this, William came to the conclusion that the only way was by a combined naval and military force to capture the most

obnoxious of the French stations, and he chose Brest to begin with. A force of about 7000 men, under the command of General Tollemache, was accordingly told off for this duty. The plan decided on was to land the troops on the narrow neck of land which separates the roadsteads of Cameret and Brest, and so isolate the port itself. Every effort was made to keep this project dark, but without success. When the attempt was made, everything was found to be prepared and ready for defense, and both the troops who landed and the attacking squadron were defeated with heavy loss. It was evident that the French had received full information. The question that arises then is, Who gave, or gave first, the information which enabled the French to be reinforced in time to meet our attack with success?

It appears from decisive evidence that Louis XIV. knew of the proposed attack on Brest as early as April 4; for, in a letter from him to Vauban on that date, he says that he "had learned from several sources that an attack on Brest is intended by 7000 British troops, and the combined navies of England and Holland," and he goes on to direct Vauban to proceed thither and take the command.

Now, the paper containing Marlborough's information, which reached Louis XIV., was one from General Sackville, the Jacobite agent in London, to Lord Melfort at St. Germains, which runs in these terms:

"May 4, 1694.

"I have just now received the enclosed for the King. It is from Lord Churchill; but no person but the Queen and you must know from whom it comes. Therefore, for the love of God, let it be kept secret even from Lord Middleton. I send it by express, judging it to be of the utmost consequence for the service of the King my master, and consequently for the service of his most Christian Majesty. You see by contents of the letter that I am not deceived in the judgment I form of Admiral Russell; for that man has not acted sincerely, and I fear he will never act otherwise."[3]

The inclosure is in French, and is from Marlborough. Translated, it runs thus:

"It is but this day that it came to my knowledge what I now send you; which is that the Bomb vessels and the twelve regiments now encamped at Portsmouth, together with the two marine regiments, are to be commanded by Talmach, and are designed to burn the harbor of Brest, and to destroy the men-of-war there: this would be a great advantage to England; but no consideration can, or ever shall, hinder me from letting you know what I think may be for your service; so

[3] "The authenticity," says Lord Wolseley, "of this letter is denied,—by some because the original of neither Marlborough's nor Sackville's letter has ever been found; but the circumstantial evidence is too strong to admit of doubt" (ii. 313, 314).

you may make what use you think best of this intelligence, which you may depend upon as exactly true" (ii. 312, 313).

It also appears that Floyd, Groom of the Bedchamber to James, who was in London early in May, received from Godolphin the information that

"Admiral Russell would certainly appear shortly before Brest, which the military officers deemed open to attack, though the sailors were of a different opinion. Floyd's information was laid before Louis at Versailles on May 1, so we are justified in assuming that it was about April the 15th or 20th when Godolphin told Floyd this. It is thus beyond all doubt that the French king, even through this channel, was in possession of the so-called secret at least a week before Marlborough's letter of May 4 could have reached him" (ii. 311, 312).

The general result of this is, that positive information was given to Louis as to the impending attack on Brest by two separate people,—one Marlborough, the other Floyd, a regular Jacobite agent; and that, of the two, Floyd was able to inform Louis a week before Marlborough could do so. But this is no justification whatever of Marlborough; for it was only by accident, not his fault, that he was anticipated in his treachery by another.

It is clear, however, as shown above, that, independent of this authentic information, Louis XIV., as early as the 4th of April, had learned "from several sources" that an attack on Brest was impending.[4]

We have now gone through, in some detail, the four great charges that have been brought against Marlborough. It cannot be said that out of any of them he has come forth scathless. But much may be pardoned to a man placed in the difficult position in which he was, surrounded by every kind of temptation, and living in an age when the principles of honor were relaxed to an extent of which we have now, fortunately, no conception.

No notice of Marlborough's life would be complete which did not include some account of his celebrated wife Sarah.

Of this very remarkable woman Lord Wolseley gives a full and excellent account. We extract some of its best passages:

"As a child Sarah Jennings had frequently resided at Court, when her elder sister Frances was in waiting upon the Duchess of York. During these visits to St. James's, Sarah became the playmate of the Princess Anne, her junior by nearly five years. An attachment soon sprang up between the two girls, and Anne loved to have Sarah constantly with her. Sarah also attracted the notice of Mary, the Duke of York's second wife, who was only two years her senior, and whilst still quite a child became maid of honor to that beautiful but unhappy princess. . . .

[4] The arguments on this point will also be found well stated in that very interesting book 'Parodoxes and Puzzles,' by Mr. Paget, as early as 1861, pp. 20–25.

"Though less lovely than her elder sister, Sarah was still radiant with beauty, and possessed a graceful figure, and great power of fascination. Numerous portraits enable us to admire her distinguished but scornful style of beauty: 'there was sweetness in her eyes, invitation in her looks,' wrote Sarah's most scurrilous assailant. Sir Godfrey Kneller has recorded for us her small regular features so full of life, her pretty mouth expressive of disdain, her slightly turned up nose with its open well-shaped nostrils, her commanding air, the exquisite poise of her small head, always a little inclined to one side, her lovely neck and shoulders, and her rich straw-colored hair, which glistened in its profusion as if sprinkled with gold-dust. . . . Over those with whom she talked she exercised a charm, a fascination, that held them enthralled as much by her graceful wit as by her seductive beauty. But the adorer who worshiped at her shrine was, without knowing how, soon made aware of the imperious temper that smouldered within her, always ready, if stirred, to burst forth as from a hidden volcano, and annihilate the offender. Her portraits, however, do not convey this idea, and no one could imagine from them that so stormy a spirit lay hidden beneath such a lovely exterior.

"Her education had been much neglected; but, like many clever people brought up at Courts, where all that is wittiest as well as most learned is to be found, she had acquired more practical knowledge than was possessed by many classical and philosophical scholars. In conversation she was bright and quick, although on paper she expressed herself in long, involved, and often ungrammatical sentences. . . . She had never been taught arithmetic, and yet she contrived to master the most complicated accounts by some curious process of her own.

"To draw her character is no easy task. As she was when a girl, so she remained as a mother, as Queen Anne's favorite, as wife to the greatest man of his day, and in old age as his widow. Neither time nor increased knowledge of the world ever changed or in any way softened her. She was essentially an unimaginative, unimpressionable woman, with no illusions about men or about events either human or divine, and without sentiment of any kind except perhaps where her husband was concerned. His love for her was deep, pure, unselfish, and passionate. All his letters, meant for no eye but hers, breathe the same lover-like devotion. They make the reader feel that, from first to last, his one great dread was that she might cease to love him. She did love him sincerely, but in her own haughty and tiger-like fashion. There was nothing demonstrative about her affection, but such as it was she gave him her whole heart. In most of the relations of life they were both egotistical and covetous, yet their marriage was absolutely uninfluenced by mercenary considerations. Their mutual attachment was stronger even than their undoubted worldliness" (i. 163–165).

Both have been accused of venality, but, Lord Wolseley contends, without any great cause. For at that time, he says,—

"No person with places at his disposal made any more scruple of selling them than of receiving his settled salary or the rents of his estate; and it was a matter of common notoriety that secretaries of state, as well as cornets of dragoons, bought and sold their commissions."

Nevertheless, as Lord Wolseley adds,—

"Her [Sarah's] love of money is undoubted, a taste which she shared with her husband. To amass wealth was a pleasure that increased with her years. . . .

"Hers was no meek heart, and she had little reverence for God or man. No belief in revealed religion or dread of future punishment restrained her will or influenced her conduct; she seldom mentioned religion except to scoff at it, and it was only from a contempt for Romanism, and from an intense hatred to priestcraft, that she spoke and wrote of herself as a Protestant. True but not tender, she lived for forty-four years with her husband as happily as her domineering temper would have allowed her to live with any one. But she never shared his strong faith, nor allowed him to exercise any influence over her mind in spiritual matters. She seems to have died as she had lived, ridiculing all belief in God and immortality" (i. 173).

We have no space to go into the very interesting account which Lord Wolseley gives of Monmouth and his rebellion. This is the only considerable military event which comes within the range of these volumes. It is very well and very clearly written, and gives a good omen of what we will have from him in his concluding volumes, which will have to do mainly with the great and immortal campaigns of this accomplished soldier.

We can make but one extract more,—that which describes the night after the decisive battle of Sedgemoor,—

"Slowly the stars died out in the cold flush of dawn, and still the battle raged; but in the growing light both sides began to realize that Monmouth was defeated. When at last day broke with that cold pitiless light which immediately precedes sunrise, crowds of the poor beaten rebels could be seen streaming back towards Bridgewater. Lord Grey's cavalry had disappeared, but a fierce fight still raged on the fatal banks of the Bussex Rhine. There the bulk of Wade's and of another rebel battalion still clung undaunted, and, using their scythes and mining tools, fought as only desperate men will fight in a religious cause. They found themselves deserted by their comrades, and by the Horse that should have protected their flanks, hard pressed as they were by the Life Guards and Churchill's Dragoons. This hopeless but gallant struggle was brought to an end at last by a determined attack of the Grenadier companies of the Guards and Dumbarton's regiment. About

three hundred of Monmouth's bravest followers fell in that charge, dying for an unworthy leader in what they believed to be a holy cause" (i. 333, 334).

We envy Lord Wolseley the task which now lies before him. In these volumes he has traversed much that is shady, much that is painful, in Marlborough's checkered career: in those which are to come he has to narrate the great and bright portions of his life,—those glorious campaigns in which he established his right to take his place on the list of the greatest commanders of any age or time, as the worthy companion in arms of Cæsar, Frederick, Napoleon, and Wellington.

General Sir Archibald Alison.

THE ENGINEER CORPS OF THE UNITED STATES NAVY.

"Their names were counted on the day of battle; but they were overlooked in the division of the spoil."

(Continued from page 15.)

PART III.

THE TRAINING OF NAVAL ENGINEERS AT THE NAVAL ACADEMY.

In a former paper of this series it was related that in 1842, soon after the first steam-vessels appeared in the navy, the engineer corps was created by act of Congress as a special branch of the naval service. And as a special branch of the service it has remained ever since, despite tentative efforts from time to time to absorb or destroy it. Without wishing to comment upon the subject at any great length, the writer will venture the opinion that in tamely looking on at the advent of a new naval corps, for which they had no liking, the line officers of the early '40's committed a most stupendous blunder. At least, it so appears now after an unprejudiced review of naval progress during the half-century that the engineer corps has been in existence.

Steam came into the navy as a great aid to naval warfare, vastly increasing the tactical qualities of fleets and ships, until then at the mercy of the winds and tides, and it is simply incomprehensible that the line officers of that day failed to see in it a development of their own profession second to no specialty with which they had to deal. One cannot doubt that they would have quickly taken up some new discovery in the art of navigation, or a great improvement in the arrangement of masts and sails, as being directly in their line and subjects to be mastered at once, but the marine engine, which was destined to effectually modify both seamanship and navigation, was regarded with unconcern as an innovation foreign to the sea profession, and one not likely to last long or to have any important effect upon naval tactics and practices.

Years afterwards, and after marine engineering had grown into a profession so complex as to be beyond the capacity of any class devoted to another calling, there have occurred numerous futile attempts to en-

croach upon its domain in the navy; attempts marked by ridiculous blunders and followed by mortification, disappointment, and loss, all of which might have been spared had a little foresight and common sense been exercised in the beginning before it was too late. The marine engine, as it first appeared in the navy, was a very simple machine compared with its present development, and the knowledge necessary for its mastery and the intelligent directions of the duties of its attendants was not by any means beyond the reach of the young line officers of the time.

There were then about four hundred midshipmen in the navy, packed together by the score in the steerages of the large sailing-ships, and picking up as best they could the rudiments of their future profession from the school-masters and boatswain's mates on board. No one can deny that these young men were as competent to acquire by proper training the knowledge that would make them naval engineers as were other youths of the same age then in the schools and workshops of the country, and who were to become the future engineers of the navy. Nor can it be claimed that any repugnance to the details of engineering, so widely affected in the navy at a later date, would have discouraged these midshipmen from learning the new vocation; they were familiar enough with toilsome practical work on the topsail yard, at the oar, with the marline-spike and serving mallet, and with many other details of their calling much more laborious than anything connected with the iron-worker's art, not to have found relief in the workshops and draughting-rooms where steam engineering had then to be learned.

Looking at the question in the light of our present knowledge of naval affairs and tendencies, it seems that the midshipmen of the olden time might, with great propriety, have been trained for the engineering branch, and been allowed to exercise that specialty without going out of the line at all, thus preventing the friction that naturally attended the introduction of a class of outsiders to assume control of a specialty essentially military when applied to the warlike operations of a navy. Whether the navy to-day, as regards its engineering and its general organization would be better off if the above outlined plan had been carried into effect is a question open to very contrary opinions; the occasion was not taken advantage of when it existed, and it is idle now to speculate as to what the results would have been. We can only regret that the experiment was not made when it was possible.

The United States Naval Academy was opened in 1845, Commander Franklin Buchanan being the superintendent and Lieutenant James H. Ward the second in command. Strange as it may seem to many, steam was one of the principal subjects taught during the first academic years, this being due to Lieutenant Ward, who appears to have had progressive ideas on the subject of marine engineering at least a generation in advance of the time in which he lived. He was

one of the few line officers then in the navy—perhaps the only one—who realized that steam-power had come into the navy to stay, and that it was destined to revolutionize naval practices. It is no flight of fancy to imagine that his prophetic vision saw in the dim future the ships of the White Squadron and the naval review of the Columbian year, and it is certain that he had such faith in the future of steam that he felt it his duty to prepare the youth of the navy placed under his charge for the change that was sure to come.

Lieutenant Ward was an ordnance expert, and to that science he joined steam-engineering, the two being kindred subjects in his mind, making of them one of the departments of instruction, of which department he was the head, and in which he gave instruction by lectures. When Mr. Ward left the academy, in 1847, steam fell a victim to the prejudice of less progressive persons, and little or no attention was given to it, it being transferred first to the department of chemistry and soon after to a new department called natural philosophy, in each of which it was starved as a foundling child unwelcome in an already crowded household. Besides being the author of a standard work on naval ordnance and gunnery, Lieutenant Ward wrote a text-book called "Steam for the Million," which was a compilation of the lectures he had given the midshipmen at the academy and which any engineer of the time might have been proud of. It is sad to have to record his untimely death, for the cause of naval engineering lost in him a champion not less to be regretted as such than was the loss to the service in general of an unusually brilliant and able officer. At the outbreak of the rebellion, he was employed on the water defenses about Washington, and in June, 1861, a month even before the first Bull Run, he was killed while gallantly attacking a rebel battery at Mathias's Point on the Potomac River, in King George County, Virginia. He was the first naval officer killed in the war.

One of the first naval lessons of the Civil War was that the day of the sailing-vessel of war was over. Sails and masts became useless appendages for war purposes, and the old order of seamanship, in the face of actual military operations, drifted back and took its place in the ranks of the traditions of antiquity, becoming an accomplishment only, a good thing for a naval officer to know, but of no more practical use to him in war than a knowledge of Greek or Hebrew or Latin. The engineers in the navy at the beginning of the war were, as a rule, skillful and efficient, but their number, much reduced as it was by resignations and dismissals of members who were natives of the Southern States, was entirely inadequate to the work that fell upon the engineering branch when many steamers were suddenly added to the fleet and designs demanded from the naval engineers for the machinery for many others to be built by the department. This made the influx of a great number of acting or volunteer engineers necessary, and some

mishaps, delays, and disasters followed as direct results of the inexperience of the new men, due, in some cases, also to their incompetency, for the emergency did not permit of fine discrimination in their selection.

The great and constantly-growing demand upon the engineer corps for the efficient performance of its part in war was such an important matter that it soon became a subject for serious consideration in the Navy Department. The need for greater scientific and technical knowledge among the engineers was one of the chief demands developed, for the many sudden emergencies and trying circumstances attending the war operations of the navy soon demonstrated that the engineers of a ship should possess considerable theoretical knowledge in addition to practical ability if the ship's machinery were to be kept in an efficient condition when far removed from the vicinity of navy-yards and consulting engineers. The conditions of service also brought forward the fact, in stronger colors than it had appeared before, that the engineer in the navy should be a naval officer as well as a marine-engineer. Mr. Isherwood, the able and far-seeing engineer-in-chief of the war period, fully appreciated the difficulties under which the members of his corps labored, and in the midst of the most engrossing duties of vast importance, he found time to address the department frequently on the subject, his opinions so far securing attention that in the annual report of the Secretary of the Navy for 1863 we find the following under the caption "Education of Engineers:"

"To attain and maintain our true position as a naval power, the best talent in the country must be found among the officers who are to conduct the varied operations of the service, and adequate provision to secure such ability and accomplishment should command the attention of those who have charge of our naval affairs. Our naval school is producing officers of skill, well educated for their profession, yet if our ships and steam-machinery are not at the highest attainable point of perfection, and the engineers are not skillful, the education and accomplishment of our officers will be unavailing to give us the naval superiority we should obtain.

"By the introduction of steam into naval operations a new corps is engrafted into the naval service of men combining science with mechanical skill and genius, whose professional attainments and practical power demand the fostering care of the government. Our naval engineers, like those of the army, should be thoroughly educated to their profession, for on them the motive-power of our vessels and the efficiency of our steam-machinery must hereafter depend. Steam-engineering should indeed be one of the important studies of all naval officers, and should be taught at the Naval Academy. It would be well to encourage such men as exhibit aptness for mechanical studies to cultivate their peculiar talents, whether as naval constructors or

engineers, in that department in which they render the highest public service. Other governments pursue this course, and we shall find our advantage in giving similar encouragement to the young men of our country.

"It is a question, indeed, as sails are subordinate to steam, whether every officer of the line ought not to be educated to and capable of performing the duties which devolve upon engineers. The means of acquiring practical as well as theoretical knowledge of the subject should be furnished by the government, and it would be well if every midshipman were to receive instruction in this now important branch of his profession. If the public is not yet prepared to combine what at present are two distinct pursuits, and make every naval officer an engineer as well as a sailor, I would recommend the formation of a class at the Naval Academy of youths, giving a preference to those who may have already evinced mechanical skill and aptitude for engineering, who might be educated with special reference to their profession as engineers. After two years' study they could be received into the corps by conferring upon them the appointment of third assistant engineers and assigning them to duty. The naval service and the country have suffered injury that can scarcely be estimated from the want of thorough, capable, and well-educated engineers. Many of our most efficient vessels have been disabled and crippled in the midst of their cruise, and sometimes even at the very commencement of their service, in consequence of the incapacity of the engineers, whereby the country has been deprived not only of the use of the vessel for weeks and sometimes for months, but the officers and crew have been constrained to inactivity instead of being employed against the enemy. Some measures are necessary to correct and prevent these disasters, so injurious to the country, and I know of none so thorough and complete as that of publicly educating and training engineers to the service. The most important branch of study at the Naval Academy is, very appropriately, seamanship. A general knowledge of the application and use of steam and of practical mechanics should follow as almost equally essential. Line officers of the navy, of whatever rank, should, moreover, have the privilege of attending lectures and pursuing the studies of steam, mechanics, and, indeed, every branch that may be taught at the Naval Academy, and it is recommended that arrangements be made for carrying into effect these suggestions."

The authorship of these views, although they embody many of Mr. Isherwood's suggestions, is generally credited to the Hon. Gustavus V. Fox, who was the assistant secretary of the navy during the war and upon whom fell the consideration of questions relating to the naval *personnel*. The soundness of his opinions in this matter cannot now be questioned, but at the time they appeared they were so

much in advance of the theories of the day that they excited considerable opposition from the dominant element in the navy. Mr. Fox's previous training well fitted him for the task of deciding just what the needs of the navy were, and made him eminently competent to judge of the necessity of changes however radical they might be. He had been a midshipman in the navy as far back as 1838, and consequently was familiar with the teachings and beliefs of those good old days, so much lamented even to this day in some quarters, when a midshipman lived in the main hold, ate his food out of a cigar box, kept his clothes in a beef-barrel, and asked permission to go on the upper deck when he was entitled to liberty. The mental effect of this sort of training was, in the majority of cases, permanent, but in Mr. Fox's case it had been eradicated by his resigning from the service in 1852, after he had become a lieutenant, and entering into the more broadening pursuits of civil life. He proved to be a successful businessman, and the knowledge of men and methods thus acquired, added to his intimate knowledge of naval affairs, particularly well equipped him for his duties when he was called to the Navy Department in 1861.

The recommendation of the Navy Department, in regard to the education of engineers, received attention from Congress without much delay, a law being enacted the following summer which gave the Secretary of the Navy authority to establish a class of cadet engineers at the Naval Academy. This was the first appearance in the United States navy of the term *cadet* as applied to a naval student or aspirant of any corps. The Act of Congress referred to was approved July 4, 1864, and became Sections 1522 and 1523 of the Revised Statutes, reading as follows:

> SECTION 1522. The Secretary of the Navy is authorized to make provision, by regulations issued by him, for educating at the Naval Academy, as naval constructors or steam-engineers, such midshipmen and others as may show a peculiar aptitude therefor. He may, for this purpose, form a separate class at the Academy, to be styled cadet engineers, or otherwise afford to such persons all proper facilities for such a scientific mechanical education as will fit them for said professions.
>
> SECTION 1523. Cadet engineers shall be appointed by the Secretary of the Navy. They shall not at any time exceed fifty in number, and no persons, other than midshipmen, shall be eligible for appointment unless they shall first produce satisfactory evidence of mechanical skill and proficiency, and shall have passed an examination as to their mental and physical qualifications.

It is improbable that the provisions of this act whereby "midshipmen and others" could be educated for naval constructors and steam-engineers as specialists in these branches came up to the wishes of Mr. Fox in the premises. His desire undoubtedly was to simplify the naval service and render its official element more homogeneous by making the practical details of engineering a part of the seamanship of the time, a full mastery of which should be incumbent upon the

line officers who performed the details of duty at sea. This is clearly shown by the careful exposition of the department's views which appeared in the annual report of the Secretary of the Navy for the year 1864, as follows:

"CADET ENGINEERS.

"Preliminary measures have been taken to carry into effect the law of the last session of Congress authorizing the education at the Naval Academy of cadet engineers, to be selected from youths not over eighteen years of age, who shall have been engaged at least two years in the fabrication of steam-machinery. A circular has been issued and printed in the papers of the great manufacturing cities inviting applications in conformity to the law.

"Before this plan shall be put into operation, it is respectfully submitted, in view of the radical changes which have been wrought by steam as a motive power for naval vessels, whether steam-engineering should not be made to constitute hereafter a necessary part of the education of all midshipmen, so that in our future navy every line officer will be a steam-engineer, and qualified to have complete command and direction of his ship. Hereafter every vessel of war must be a steam-vessel. Those designed for ocean service will be furnished with sails in order to economize fuel while cruising; the present and future navy will therefore combine sails and steam as motive power, and seamanship and steam-engine driving will each be necessary to make the finished professional officer. The officers to sail and navigate a ship and the officers to run the steam-engine are about equal in number.

"The department is not aware that any line officer, whatever attention may have been given by him to the theoretical study of steam, is yet capable of taking charge of an engine, nor are steam-engine drivers capable of taking charge of a man-of-war, navigating her, fighting her guns, and preserving her discipline. When vessels were propelled exclusively by sails there were but two officers, excepting in flag-ships, the surgeon and paymaster, who were not line officers. But under the present naval system a new and additional corps is introduced, as many steam-engineers being required for a vessel as there are line officers; and, while cruising under sail, or lying in port, or performing any duty when the engine is at rest, one-half of the officers are, by existing regulations, idle and incapable of participating in duties that are often laborious and oppressive on the officers of the line, comparatively speaking. The engineers would willingly share these duties were they acquainted with them. But half the officers of a steamship cannot keep watch, cannot navigate her, cannot exercise the great guns or small arms, nor, except as volunteers under a line officer, take part in any expedition against the enemy. On the other hand, the other half of

the officers are incapable of managing the steam motive power, or of taking charge of the engine-room in an emergency, nor can the commander of a vessel, though carefully taught every duty of a sailor and drill-officer, understand, of his own knowledge, whether the engineers and firemen are competent or not.

"The remedy for all this is very simple, provided the principle were once recognized and adopted of making our officers engine-drivers as well as sailors. It would not be expedient to interfere with the present status of line officers or engineers,—the change would be too radical; but we should begin by teaching each midshipman to be able to discharge the duties of line officers and engineers, to combine the two in one profession, so that officers so educated can take their watch alternately in the engine-room and on deck.

"Objection may be made that the duties are dissimilar, and that steam-engine driving is a specialty. The duties are not more dissimilar than seamanship and gunnery. When seamanship was the only education given to an officer, it was not believed he could ever learn to teach sailors to drill, and a sergeant of marines performed the duty which is now so admirably discharged by the graduates of the Naval Academy. When gunnery became a specialty, it was inconsiderately and unwisely proposed to have a corps of ordnance officers engrafted upon the naval service, a separate organization, which should draw to itself the knowledge so necessary to each, and therefore proper to be distributed among all the officers.

"Fortunately, our naval officers are taught seamanship, gunnery, and the infantry drill, and the service thereby saved from distinct organizations in these respects which would, inevitably, have impaired its efficiency. It only remains to commence, at this time, and as preparatory to the future of the navy, to teach the midshipmen steam-engineering, as applied to running the engine. This would be independent of the art of designing and constructing, which is purely a specialty, and nowise necessary in the management and direction of the ship. And to this specialty, as a highly scientific body of officers, would the present corps of engineers be always required as inspectors and constructors of machinery. With the adoption of the suggestions here made, we shall, in due time, have a homogeneous corps of officers, who will be masters of the motive power of their ships in the future as they have been of seamanship in the past. By this arrangement there will be in each ship double the number of officers capable of fighting and running the vessels without additional appointments or expense. Innumerable other advantages commend the plan as worthy of trial, and it is presented for favorable consideration. The work can be commenced and carried forward at the Naval Academy without any additional appropriation, and the authority of Congress is invoked in behalf of the suggestions here submitted."

The only immediate step taken to put these recommendations into operation was the detailing of some assistant engineers of the regular navy to duty at the Naval Academy, then at Newport, Rhode Island, as "Acting Assistant Professors of Natural and Experimental Philosophy," but it is largely in evidence that they did not make engineers of any of the midshipmen then under instruction; the philosophical department at the Academy was at that time regarded as of little importance, and in the distribution of time was not allowed enough to make its course at all thorough, which fact is sufficient in itself to account for the lack of engineering information gained by the pupils. The following year (1865) the Academy was moved back to Annapolis, where it had been before the war, and the "Department of Steam-Enginery" (afterwards changed to Steam-Engineering) established as one of the regular branches of learning of the institution.

Thus far, no class of cadet engineers had been formed, but the new department at once undertook the duty of instructing the midshipmen in the principles of marine-engineering, using such appliances as were then at hand and one or two small naval steamers sent to Annapolis for that especial purpose. The present steam-building was erected in 1866, and the greater part of its present equipment installed at that time, making a plant that for purposes of instruction in marine-engineering was probably not then excelled anywhere in the country. The programme did not run smoothly for various reasons, chiefly, so far as I can learn, on account of antagonism to the part of officers in the navy. One has to regret that Lieutenant Ward had not survived, and that he could not have been at the Academy at this time with the rank that his talents undoubtedly would have won for him in the war; under the management of one as progressive as he had shown himself to be an impetus to the new education would have been experienced that would have been of incalculable benefit to the naval service.

The Secretary's report for 1865 again came to the defense of the new system, this time going so far as to assert that the line officers would shortly find themselves in a position of secondary importance if they clung to the old seamanship as a profession. Under the head of the Naval Academy we find the following comments in the annual report for that year:

"In dispensing with vessels propelled wholly by sails from the list of regular men-of-war, it has become necessary to instruct the future naval officer in the principles and practice of steam-enginery. A separate department, having this object in view, has been established at the Naval Academy, under the management and direction of Chief-Engineer Wm. W. W. Wood, assisted by eight others, who are charged with the duty of teaching the midshipmen not only the theory of the steam-engine, but, as indicated in my last report, its actual manipulation. Sufficient experiments and progress have already been made in running

the engines of the vessels attached to the Academy by the midshipmen to warrant the department to persevere in its purpose of perfecting the education of the future line officers, by making them competent, in addition to their other acquirements, to manage and work the engine.

"The management of a man-of-war in a gale, on a lee shore, in a narrow harbor, or the splendid manœuvres of battle by sailing-vessels, have hitherto been the highest and proudest duties of a thorough naval officer. The skillful disposition of the sails, which was the result of the best training of the old school, is no longer necessary, except as auxiliary to the new motive power which modern invention and science have introduced. The naval vessel is no longer dependent on the winds, nor is she at the mercy of currents; but the motive power which propels and controls her movements is subject to the mind and will of her commander, provided he is master of his profession in the future as he has been in the past. To retain the prominence which skill and education gave him when seamanship was the most important accomplishment, the line officer must be qualified to guide and direct this new element or power. Unless he has these qualities, he will be dependent on the knowledge and skill of him who manipulates and directs the engine. To confine himself to seamanship, without the ability to manage the steam-engine, will result in his taking a secondary position, as compared with that which the accomplished naval officer formerly occupied.

"For the full development and accomplishment of an object which can no longer be considered a doubtful experiment, the active co-operation of naval officers is required. When this change is effected, engineers will become the designers and constructors of engines and other marine works, and the superintendents of the mechanical employment which a navy propelled by steam has developed and may require. They will constitute in reality a highly-educated and scientific corps, and the line officers will have added to their duties the practical management of the engines."

The concluding paragraph of this extract indicates that the new scheme for naval education had not been supported by the officers of the service, and it is a matter of record that bitter opposition to it had been experienced. Those officers whose age and rank entitled their opinions to respect had received their naval training under the old order of things, so it was but natural for them to doggedly defend the system which they knew and to decry that which they did not know, the institutions of the old navy having been peculiarly well adapted to develop the spirit of antagonism to progress which was manifested. Although natural, this sentiment cannot be regarded as sensible, especially as the officers who entertained it had the practical instruction of a long war immediately behind them, and to the teachings of which

they had to be both blind and deaf in order to consistently maintain their cause. The condition was unfortunate, for the young midshipmen naturally respected the views of the old and distinguished officers and entered with zeal into the ranks of the conservatives, unconsciously absorbing a contempt for all that was new and useful in naval progress and acquiring a blind and silly affection for that which was obsolete. The evil effect upon the naval service which followed this unreasonable sentiment cannot be overstated, for it operated to entirely defeat the wishes of the Navy Department in regard to naval education, and it launched a new generation of officers upon a naval career with professional ideas and beliefs that might just as well have been acquired in the middle of the eighteenth century, so far as they had any bearing upon the actual conditions of the service for which the officers were in training.

It is occasionally loosely charged that the engineers who went to Annapolis as instructors in the early days of the engineering course were themselves to blame for the total failure of the midshipmen to acquire any knowledge of the subject, for the reason that they (the engineers) had such a consequential idea of the importance of their specialty that they wished to guard its principles as potent secrets not to be whispered outside of their own guild, and therefore allowed their instruction to take the form of farce and deception. It has never been my misfortune to meet a member of my corps so bigoted and narrow-minded as to entertain any such views, and as there could have been no possibility at the time of making class secrets of a branch of common knowledge, however popular similar mysticism may have been in the Middle Ages, one cannot attach any belief to the accusation. The fault was wholly and entirely with the midshipmen themselves, for they were old enough not to have been misled by the unwise counsel of those whose period of activity had manifestly been replaced by a newer and more civilized order of things.

In spite of the steps taken by the department to carry into effect the law of 1864, authorizing the education of cadet engineers at the Naval Academy, candidates for that attention were not forthcoming. The reason probably being that the people were very weary of a long war and not disposed to enter their sons in the service of the government, even to go to school. Besides this, young men who had been "engaged at least two years in the fabrication of steam-machinery" were not disposed to accept conditions that would put them back into the school-room, nor likely to become very apt pupils if they did; they certainly consulted their best interests by remaining where they were, identified with the great awakening of the manufacturing industries of the North that took place at the close of the war.

In 1866, after two years of advertising of the cadet-engineer programme, the first fruits appeared in the form of two young men

who were admitted to the Academy in October of that year, and two others who entered a year later. As these four cadet engineers were the first of their species in the navy, it is worth while to trace their careers.

Those who entered in 1866 were George D. McCarty, of New York City, and James P. Wilson, of Washington, D. C., and they were to some extent the victims of circumstances, being used by the Naval Academy officials as useful objects upon which to experiment in the development of a course of study for engineer students. The result of this was that when James Steel, of Wisconsin, and C. P. Howell, of New York, entered in 1867, all four were equally prepared for the same course of instruction. Towards the end of that academic year, Mr. Wilson resigned, and Mr. McCarty, discovering that he had missed his vocation, got an appointment as a midshipman and entered the third class of midshipmen,—the class of 1871. About a year later, when the click of the lawn-mower gave ominous warning that "bilging time" had once more come around, he, too, tendered his resignation. Messrs. Steel and Howell proved to be very bright students and were sent to sea on a probationary cruise in 1868 in the sloop of war "Contoocook," afterwards the "Albany." Cadet Steel died at sea that same year, but Mr. Howell survived the cruise, was promoted in due time, and is now a chief engineer in the navy.

While the first cadet engineers were being experimented upon there were some engineer students of quite a different stamp undergoing instruction at the Academy. Not getting any results from the manufacturing cities in which the cadet-engineer system had been advertised, the department invaded a new field for recruiting by sending circulars to the large colleges of the country in which engineering was taught. In conformity with the terms of the circular about fifty candidates, the most of whom were college graduates, appeared at Annapolis in the summer of 1866 and underwent a competitive examination, the sixteen who passed the highest being selected for the service. They were too well educated and too old to be made cadets of, so they were appointed acting third assistant engineers and given a special course of instruction in marine engines, and some other naval subjects not specially dealt with at the colleges that they came from. They did not live inside the walls of the Academy, and did not form a part of the cadet organization of the time, being more on the footing of junior officers taking a post-graduate course. Five of them came from the Rensselaer Polytechnic Institute, of Troy, New York, five from Harvard, one from Yale, two from Brown University, one from Union College, and two were not college men. All sixteen graduated at the end of a two-years' course with great credit and went into active service as third assistant engineers, being beyond doubt the most accomplished group of young officers ever added to any corps of the naval

service. It is not a pleasant task to have to record that seven of them resigned within less than five years after graduating.

The meagre results of the efforts to inaugurate the cadet-engineer system discouraged the authorities, and after the graduation of the two cadets in 1868 the project was dropped for a time. Public interest in the matter had been awakened to some extent, however, and in 1871 the Navy Department, in response to numerous applications, issued examination permits to some fifty or sixty candidates, from whom a class of sixteen was selected by competition and admitted to the Academy as cadet engineers in October of that year. The officers on duty at the Academy having changed in the intervening three years, the new class of cadets became experimental objects for the discovery of a course of study for them, with the result that only five passed into the senior class at the end of the academic year; two were found deficient and dropped, and nine were turned back, making, with seventeen who entered in 1872, a second class of twenty-six members. In October, 1873, sixteen more cadets were admitted, the first class then consisting of fourteen members and the second class of twenty-three, and the system of educating engineer cadets at the Naval Academy may be said to have been then well established.

By an act of Congress approved February 24, 1874, the academic course for cadet engineers was made four years instead of two, and another act, approved June 22, 1874, provided "that so much of the act entitled 'An Act to authorize the Secretary of the Navy to provide for the education of naval constructors and steam-engineers, and for other purposes,' approved July 4, 1864, as provides that cadet engineers, not to exceed fifty in number, shall be appointed by the Secretary of the Navy, is hereby repealed; and cadet engineers shall hereafter be appointed annually by the Secretary of the Navy, and the number appointed each year shall not exceed twenty-five; and that all acts or parts of acts inconsistent with the provisions of this act be, and the same are hereby repealed." These two laws went into effect with the class that entered the Academy in September, 1874, this being the first fourth-class of cadet engineers to become a part of the battalion of midshipmen.

The cadet-engineer system by this time had become well known and popular, and each succeeding year brought a greater number of candidates to the annual competitive examinations until it was not unusual for two hundred or more alert and well-schooled youths from all sections of the country to compete for the twenty-five appointments each year. This made a system of selection that could not well be improved, although it involved disappointment to the great majority of those examined. As the number of candidates constantly increased, the Navy Department finally issued a warning to applicants in these terms: "Candidates for admission as cadet engineers are cautioned that

the number of applicants is large, and the competition exceedingly close. It is, therefore, useless for candidates to present themselves unless well prepared on the subject of the examination, and unless their physical qualifications are within the prescribed standard." This warning may have deterred some who were conscious of deficient schooling from making the journey to Annapolis, but it also served to encourage the highly educated, and resulted in the admission of some each year who found little in the curriculum of the Academy, outside of the purely naval subjects, that was new to them, and who distinguished themselves in class-standing accordingly. It is a great pity that this system was eventually overturned.

The subjects for the competitive examination looked easy in the abstract to an average high-school boy, being stated in the circular as follows: "Arithmetic; algebra, through equations of the first degree; plane geometry; rudimentary natural philosophy; reading; writing; spelling; English grammar; English composition; geography; free-hand drawing; and an elementary knowledge of the principles governing the action of the steam-engine. Candidates who possess the greatest skill and experience in the practical knowledge of machinery, *other qualifications being equal*, will have precedence for admission." This last sounded well, but unfortunately had no meaning, as under the rigid system of marking examination papers it was practically impossible for two candidates to come out with the same marks, and the oral examination in steam was assigned such a low multiple in making up the aggregate marks that its weight was inappreciable. Indeed, if I remember correctly, this examination was soon dispensed with, and the mark for knowledge of machinery was given from an inspection of the drawing made by the candidate in the free-hand drawing examination, pieces of machinery being exhibited for candidates to make pictures of.

Elementary as the examination appeared in the descriptive circular issued to candidates, it was far from being so when administered by the Academic Board, which body gave free rein to its well-known desire to run riot with theory at the expense of practical knowledge. The result was that those who succeeded in getting appointments were the scholars,—often college graduates,—and that any young man who had spent much time in gaining practical knowledge of machinery had no show whatever with those who had never been diverted from their books, thus defeating one of the original provisions of the project. Of the classes that entered in 1874 and 1875, only one member of each is on record as having had any practical experience with machinery, while in the succeeding classes there was seldom even one.

A few questions taken from the examination papers of that time will show how far beyond the stated subjects the examining officers saw fit to go. In "algebra, through equations of the first degree" we find things like this,—

"Reduce $x^6 - 5x^5 + 4x^4 - 3x^3 + 2x^2 - x + 1$ to the form $Ax + B$ by means of the equation $x^2 = 2x - 3$."

"Rudimentary natural philosophy" was considered broad enough a subject to warrant this question: "Find the number of units of work expended in raising from the ground the materials for building a uniform column fifty feet in height and ten feet square, a cubic foot of the material weighing one hundred and twelve pounds. How high is the column when the work is half completed?" This was one of fifteen questions (and not the hardest one, either) given in an examination limited to three hours.

The spelling examination was an aggregation of orthographic horrors that would have struck terror to the soul of a professional philologist, and the sentences given out for grammatical analysis were simply unspeakable. In geography the uttermost parts of the earth were ransacked for strange names and unknown regions; the candidate was asked to "describe the Syr-Daria River, telling where it rises, in what direction it flows, and into what water it empties." He was asked to bound Servia and Roumania; to name the four provinces of Ireland, and to locate Cape Lopatka.

There were of course twenty-five candidates each year who weathered this ordeal better than the others and got the appointments; strange as it may seem, these twenty-five youths generally came out with very creditable marks in spite of the fact that the questions set them were far beyond what they had been notified to expect, and each class of these cadet engineers possessed one or more of those prodigies who, according to the pleasant fictions of the service, drove the esteemed heads of the various academic departments to despair, and perhaps drink, because the task of finding some new thing to teach them was a hopeless one. Be this as it may, it is a fact that this system of selection, as it progressed from year to year, brought remarkably fine material into the Academy, and made it possible to build up at that institution a school of marine-engineering and kindred sciences that was admittedly not excelled in the United States at the time that the whole system was ruthlessly and foolishly swept away.

In 1882, after the cadet-engineer system had been long enough established to become an important element in the academic organization, and when the course of instruction, both professionally as marine-engineers and generally as naval officers, had been developed until it was almost perfect, the whole thing was abolished by act of Congress, and the cadet engineers then at the Academy were transformed into naval cadets of the line. The ostensible reason for this destruction was that the number of engineers in the navy was greatly reduced by the same act of Congress, and there would consequently be no vacancies for future engineer graduates of the school; the real reason originated in jealousy within the navy itself, engendered by the fact that, owing to the

competitive method of selection, the engineer corps was getting the flower of the Academy each year. A good deal might be said on this subject, but for the purposes of this article it will be sufficient to quote the opinion of Professor W. W. Hendrickson, who was head of the department of Mathematics at the Naval Academy during the entire cadet-engineer period, which opinion, based on absolute knowledge of academic methods, furnishes the key of the whole question. Testifying before the Board of Visitors a few years after the abolition of the engineering course, Professor Hendrickson said, "They (the cadet engineers) could accomplish all required of them and have time to spare, and that was partly the reason why the system was broken up. They were becoming the best students of the school."

The standing taken by the cadet engineers transferred into the classes of midshipmen shows well the superior nature of the method by which they had been selected. A year after the exchange was made we find that seven of the first ten members of the graduating class were former cadet engineers, and four of the six "stars" of that class were engineers, although the two first members had been midshipmen: it must be remembered that the engineers of this class were seriously handicapped by going into the first class to compete in technical studies with the midshipmen who had had at least one year's study in such subjects before, and which the cadet engineers had to make up in addition to the regular work. In the next class the three leading members were former cadet engineers, the first one having a multiple fifteen units above the highest midshipman, and this same cadet engineer became the next year the "four-striper," as the cadet who commands the battalion is called in Academy language. In the third class after the amalgamation took place, and in which class the cadet engineers were on an equal footing with the midshipmen, as their previous year's studies had been practically identical, we find that thirteen of the first fifteen members, nine of the first ten, and all six of the "stars" were former engineers, and one of these cadet engineers also became in turn the commander of the battalion of cadets.

For seven years following 1882 the few vacancies that occurred in the engineer corps were filled by the promotion of cadets who had been educated as line officers only; since 1889 the cadets destined for the engineer corps have had the last year of the academic course partially devoted to engineering subjects, and a little more attention is now being given to the mechanical education of the line cadets, although the main royal yard remains the fetish before which they are taught to bend the knee. As the sea duties of junior engineers are executive rather than professional, especially on the large high-powered ships where the engineer's force is large, the present system may be said to satisfactorily fit the cadets for such duties, but it remains to be seen

whether or not it will inculcate that love of mechanical science which will produce the engine- and ship-designers that the cadet-engineer system developed, and who have reflected so much credit upon their corps and the navy at large by the splendid work done by them in the rebuilding of our navy.

After carefully reviewing the results of the education of engineers at the Naval Academy, and comparing them with the wishes expressed in the reports of the Secretary of the Navy before quoted, we must reluctantly admit that so far as the plans of the department are concerned the entire programme has been a most lamentable failure. The engineer and construction corps of the navy are infinitely better off as regards *personnel* on account of the experiment, but one fails to see just how the line of the navy has been benefited. Line officers have not become engineers any more than they were in 1864, and the military training that has been given the young engineers is not in any way made use of to simplify the details of organization on board ship. The majority of the engineers of academic training are fully competent to perform the duties of line officers of their grades, even if the line officers cannot undertake the engineer's duties, as the department had hoped, but so far from using this fact to increase the efficiency and homogeneity of the corps of officers on board ship the division of duties is more sharply defined by regulation than ever before, as though the object were to prevent the engineers from being useful in a general way, and the present condition is one productive of much disorganization, dissatisfaction, duplication of duties, and genuine waste of energy and ability. Who is to blame?

The following data regarding the classes of cadet engineers graduated from the Naval Academy, arrived at with considerable patience and labor from the dusty records of the department, will be of interest to some who read this article:

Class of 1868 (acting third assistant engineers): graduated sixteen members; six now in active service; one on retired list; seven resigned their commissions; one dismissed; one died in service.

Class of 1868 (cadet engineers): graduated two; one in service; one died at sea.

Class of 1873: graduated five members; four now in active service; one on retired list.

Class of 1874: graduated ten members; seven in active service; one on retired list; two resigned.

Class of 1875: graduated fifteen members; eight in service; one on retired list; one lost at sea; five resigned.

Class of 1876: graduated three members; two now in service; one died in service.

Class of 1878: graduated fourteen; eight in service; one on retired list; five resigned.

Class of 1879: graduated twenty-three; twelve in service; five died in service; four resigned; one wholly retired; one dropped.

Class of 1880: graduated seventeen; six in service; one on retired list; one died in service; nine resigned.

Class of 1881: graduated twenty-four; nine in service; two on retired list; one died in service; twelve resigned.

Class of 1882: graduated twenty-two; nine in service; two retired; three died in service; six resigned; two appointed second lieutenants in the Marine Corps.

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Passed Assistant Engineer U.S.N.

(To be continued.)

COURTS-MARTIAL.

It is well known to military and naval officers that a "court-martial" is a court consisting of military or naval officers, and is organized for the trials of persons belonging to the army or the navy who are guilty of violations of orders of discipline, desertion, mutiny, breaches of order, insubordination, etc., and, unlike civil courts of justice, have but a temporary existence; exceptions to this rule will be noticed farther on.

ORIGIN AND BRIEF HISTORY OF COURTS-MARTIAL.

Courts-martial are supposed to have had their origin in England, in what was known as "Courts of Chivalry" or "Knights Court" (long since obsolete) held by the lord high constable, in matters relating to "jousts" and "tournaments."

It was under Charles I. (1625–1649) that the modern form of courts-martial was adopted.

"In 1632 the office of lord high admiral was first put in commission; previous to this date, the admiral in command made regulations for the punishment of crime and enforcement of discipline aboard his fleet."

In 1635, the Earl of Lindsay issued the following instructions to the officers of his fleet:

1. "In your own particular, you are to have special care that you perform your duty faithfully and with diligence; and if any seaman, or other in your ship, shall raise faction, tumult, or conspiracy, or commit manslaughter, or murder, or shall quarrel, or fight, or draw blood, or weapon to that end, or commit theft, or other heinous capital offense, you shall cause precise information to be brought to me thereof that I may inflict condign punishment upon each offender, according to the condition of his crime."

2. "If any under your command in that ship shall be a common swearer, blasphemer, railer, drunkard, pilferer, or sleep at his watch, or make a noise, and not betake himself to his place of rest after the watch is set, or shall not keep his cabin cleanly, or be discontented with his proportion of victuals, or shall spoil or waste them, or any other necessary provisions for the ship, or shall commit any insolency or disorder fitting

by you to be corrected, you are to punish them according to the order and custom of the sea." Which were as follows, viz.:

"Putting one in the bilbows (feet shackles) during pleasure; keep them fasting; duck them at the yard-arm, or haul them from yard-arm to yard-arm under the ship's keel; or make them fast to the capstan and whip them there; or at the capstan or mainmast, hang weights about their necks till their heart and back be ready to break, or to gag or scrape their tongues for blasphemy or swearing. This will tame the most rude and savage people in the world."

Certainly there can be no question as to the correctness of "Earl Lindsay's" conclusion as to the results of his disciplinary methods, and it is gratifying to know that, owing to a higher civilization and improved methods of discipline, no such barbarous treatment is required to maintain discipline in any naval organization now in existence, nor would it be allowed.

The extreme severity of the English naval laws was materially modified by acts of Parliament in 1645, under which Blake, Monk, Disbrow, and Penn issued the following instructions on December 16, 1653:

"INSTRUCTIONS FOR ALL COMMANDERS-IN-CHIEF OF SQUADRONS, FOR ALL FLAG-COMMANDERS IN THEIR DIVISION, AND FOR ALL CAPTAINS OF SHIPS AT SEA IN THE SERVICE OF THE COMMONWEALTH.

"By Robert Blake, George Monk, John Disbrow, and William Penn, admirals and generals of the fleet, set forth by authority of Parliament of the Commonwealth of England and for defense of the same.

"Whereas, there are and may be from time to time sundry exorbitances and miscarriages among several persons in the fleet, for restraining whereof general councils of war cannot be so frequently called as were requisite: For preventing, therefore, of the same, and for regulating and governing the fleet in better order for the future, according to the laws of war and ordinances of the sea ordained and established by Parliament of the Commonwealth of England, we have thought expedient and do hereby order as followeth:

"That the first article of said laws and ordinances be duly observed by each commander of and in the fleet, according to the true intent and tenor thereof.

"That the chief flag (or commander) of each squadron, with the assistance of the council of war of the squadron under his command, do fully determine, sentence, and punish all offenses committed against any and every of the Articles of the Laws of War and Ordinances of the Sea, by any persons belonging to any of the ships in his respective squadron; *provided*, that no execution or sentence of loss of life or limb do proceed (if the fact shall so deserve) until that we, the generals, be

made acquainted with the crime (the criminal being still secured), as also with the depositions against, and defenses made by, the offender, with all circumstances thereon depending, and the same delivered to the judge-advocate of the fleet, to be unregistered and kept upon record; Provided, also, that no sentence for the cashiering of a captain of any vessel of war, of the states, or in their service, do pass until that we, the generals, have had information of the whole, and that the proceedings be delivered as abovesaid to be recorded.

"That each commander bearing flag subordinate to the chief commander of any squadron calling to counsel with him the commanders of the ships of his division, that shall be present, to the number of three at least, have hereby power to determine, sentence, and punish all offenders against any, and every, of the said laws and ordinances of the sea, that are or shall be committed within the ship (or any ships of the division) under his command; *provided*, that no sentence of loss of life or limb do pass upon any person, or of cashiering any captain, until we, the generals, be made acquainted with all the circumstances of the proceeding.

"And likewise provided, that no sentence of cashiering any lieutenant, or master of any ship of war, of the states, or in their service, shall pass until the chief flag or commander of that whole squadron be informed, as aforesaid: And that the informations and the depositions be remitted to record, as in former sections expressed.

"And it is hereby likewise ordered, that whensoever any vessels, consisting of three ships of war or more, shall be sent or commanded towards any guard or station, the commander of that party shall have, and hereby hath the same power to punish any manner of crime or person that is hereby given unto the flag-commander of a division during the time of their stay abroad.

"It is further ordered that the captain of each particular ship of war, of the states, or in their service, calling unto his assistance the lieutenant of the said ship (if any be thereon allowed), with the master, his mates, clerk of the cheque, gunner, boatswain, and carpenter thereof, have hereby power to examine, bring to trial and punishment any person belonging to the ship whereof he is commander for any and every offense committed against any of the said laws and ordinances of the sea, or against such other orders as have been formerly or shall be made by us for retaining mariners within board of their respective ships, for the containing of them within their duties whilst on board, and for the punishment of any who shall attempt to carry them thence without leave first obtained.

"And this order is further to extend to the punishing in like manner of any offense committed on shore in any place or harbor (into which any of the ships that are, or shall be, in the service of the state shall be sent or have occasion to put in) by any person of or belonging to

any such ship or vessel, as also of any offense committed against orders already made, or hereafter to be made by us, for the prevention of fire or any other accidental mischance by miscarriage of light, taking tobacco, selling strong water or strong drink within board, or the breach of future orders, for the avoiding of mischiefs, and inconveniences in the fleet; *provided*, that no sentence of loss of life or limb do pass, nor the cashiering of any officer having a commission or warrant for his place, but that all such officers be remitted unto the commander of the party (if remote from the fleet), or to the flag-commander of the division, or to the next superior commander in the squadron, or (if he also be absent) to the chief flag or commander thereof, according to the power by us devolved unto every of them in the preceding sections; and that each person within their cognizance respectively may receive sentence and undergo execution thereof condign to his demerit, reserving the case of loss of life or limb or cashiering of captains to our own immediate knowledge.

"And it is lastly ordered that, according to a former order of the 16th of May, 1653, all commanders of ships of war, in the service of the states do, without delay, repair on board the flag of the division under which they are ranged, or the chief flag of the squadron, at all such times as a pendant or other signal for a council of war shall be put forth by any of said flags, upon penalty of the forfeiture of one whole day's pay for the first neglect, and the like for the second, unless cause allowable be shown to the contrary (in which case they are to send the officer nearest them in place or command to excuse their absence), and upon refusal of payment, to be taken into custody by the marshal-general of the fleet until the same be made. And the same person offending a third time to be presented and proceeded against at the next general council of war as a contemner of order and discipline.

"Given under our hands and seal Anchor, on board the 'Swiftsure,' the 16th day of December, 1653.

"(Signed) GEORGE MONK.
"WILLIAM PENN."

The first notice of the form and constitution of a naval court-martial found in English history is contained in the above instructions of Monk and Penn.

From this period on until the time of Charles II. (1660–1685) the changes and modifications of the laws, ordinances, and rules governing military and naval courts were important.

Under his reign the "Military Code" and "Administration of Justice" assumed the definite outlines in which both were adopted by Parliament in the reign of William and Mary (1689–1702).

The fundamental ground-work of the laws governing the army and navy of Great Britain is to be found in the two Mutiny Acts. The

first, under William and Mary (1689–1702), amended down to and including the year 1717, contains ten comparatively brief sections.

The second, under "Victoria," contains one hundred and six sections.

The act of Parliament passed in 1866, known as the Naval Discipline Act, provides for the constitution of courts-martial as follows:

That a court shall consist of not less than five nor more than nine officers. This is followed by fifteen additional paragraphs of detail.

The act requires that the minimum number and the lowest rank of officers to constitute a court-martial shall be,—

For the trial of a flag-officer, the president, a flag-officer, and four captains.

For the trial of a captain, the president, a captain, and four commanders.

For the trial of any person below the rank of captain, two commanders and two lieutenants.

The officers disqualified from sitting as members of a court are,—

Officers under twenty-one years of age.

The prosecutor.

The officer ordering the court.

Superintendent of dock-yards, unless specially directed by the admiralty.

"General court-martial in the English army originally consisted of twelve members besides the president."

In the time of James II. (1685–1688) the council of war or courts-martial was to consist of seven at least.

. . . "A court-martial may be originated at the instance of and charges be supported by an inferior against his superior officer, but the consequences resulting from an acquittal in either case are widely different. The inferior arrested and arraigned at the instance of a superior officer and acquitted by a court-martial has no legal remedy for his arrest and arraignment, because both were official acts within the scope of the superior officer's duty; when, however, the charge of the inferior against his superior fails, the accusation clearly becomes a crime of insubordination, for which an adequate punishment must be immediately awarded against the accuser."

General courts-martial are attended either by a judge-advocate appointed by a commission, or by a deputy, either permanent or special, under the hand and seal of the judge-advocate-general.

"The appointment of a judge-advocate may at any moment be revoked by the authority which made it, and a judge-advocate may be relieved during the course of the trial and another appointed.

"The presence and assistance of an officiating judge-advocate duly appointed are essential to the jurisdiction of a general court-martial."

GENERAL RULES AS TO THE ADMISSION OF EVIDENCE.

1. "That the evidence, on either side, must be confined to the points in issue."

2. "That the points in issue are to be proved by the party who asserts the affirmative."

3. "That it is sufficient to prove the substance of the issue or charge."

4. "That hearsay is not evidence."

5. "That the best evidence must be produced which the nature of the case will admit of.

"The Court has power of finding the prisoner guilty of a less serious offense than that charged."

The Board of Admiralty have power under acts of Parliament of suspending, annulling, and modifying sentences which are not capital.

The laws of evidence are essentially the same in courts-martial and in ordinary criminal courts of England.

The military department of the judge-advocate-general of England consists of the judge-advocate-general (who is a lawyer, a privy-councillor, and a member of Parliament), a deputy judge-advocate (who is also a lawyer), and three military officers as deputy judge-advocates.

At a military general court-martial a judge-advocate representing the judge-advocate-general officiates, his functions being very much those of a legal assessor: he advises upon all points of law, and sums up the evidence just as a judge charges a jury.

In cases of general courts-martial the proceedings are sent to the judge-advocate-general, who submits to the queen his opinion as to the legality of the trial and sentence.

Austria has five hundred auditors (judges or commissioners), one being attached to each regiment. They have also courts of appeal from the courts of first instance, these latter consisting of eight persons, including the auditor.

Germany has general and regimental courts, an auditor (who is a lawyer), whose duty it is to expound the law, etc., to the court.

Russia has three kinds of military courts,—viz., "regimental courts-martial," the "tribunal of military districts," and the "supreme tribunal" at St. Petersburg; all are permanent courts, and are attended by legal persons. There is a judge-advocate-general at St. Petersburg, where the supreme tribunal consists of general officers and high War-Office functionaries who have studied military law or possess a large experience in its working.

Italy has permanent tribunals for the trial of non-commissioned officers and soldiers; special courts, or tribunals, are appointed to try officers; an appeal lies to a supreme war tribunal, which consists of four civilian judges and three general officers.

France has laws, ordinances, etc., for the government of its army and navy similar to those of the other great European powers.

With the exception of England, I have no means at hand for ascertaining anything relating to the special laws and regulations for the government of the navies of the other great powers of Europe. I presume, however, that they conform generally to those for the government of their armies, modified to suit the differences in organization.

In the United States, all general orders, department regulations, rules, etc., for the government of the army and navy are made in conformity with, and in obedience to, acts of Congress.

ARMY.

Section 1342, R. S., provides that the armies of the United States shall be governed by certain (specific) rules and articles, the latter numbering one hundred and twenty-eight paragraphs. The instructions for organizing and the rules for conducting trials by courts-martial are given in forty-seven paragraphs, or articles.

NAVY.

By act of Congress, it is provided that a general court-martial may be convened by the President, the Secretary of the Navy, or the commander-in-chief of a fleet or squadron; but no commander of a fleet or squadron in the waters of the United States shall convene such a court without express authority from the President.

It is further provided, that a general court-martial shall consist of not more than thirteen, nor less than five commissioned officers as members.

In conformity to the acts of Congress, the Navy Department has issued the necessary regulations for general courts-martial, containing ninety-seven articles.

The important duties of the judge-advocate are very clearly defined in thirteen of the ninety-seven articles of these regulations.

In his military character, as an officer, he is responsible for the proper discharge of his duties to the convening authority.

He is to critically examine the charges, call upon the accused for a list of witnesses. It is his duty, under the direction of the court, to record its proceedings, administer the required oath to the members, and to advise the court in all matters of form and law.

He is the official prosecutor for the United States, and in certain cases he must advise the prisoner. He is to be careful to object to the admission of improper evidence, and shall point out to the court irrelevancy of any testimony that may be adduced which does not bear upon the matter under investigation.

In brief, as a naval officer, he must be familiar with hydrography,

navigation, gunnery, naval and military tactics, etc., and (as judge-advocate) a lawyer.

It is conceded that American youths are susceptible of a high order of mental development, especially under the rigid and careful training they undergo at our military and naval academies; but is it not expecting too much of them to suppose that they can become perfect in all of the branches of a naval education, and at the same time experts in the intricate profession of law? And yet upon his legal abilities as a lawyer (in discharge of the duties of judge-advocate) the interest of the government, as well as the officer, soldier, or sailor, is largely dependent.

From a careful examination of the laws and regulations for the government of the armies and navies of the great European powers, it will be observed that no such duties and responsibilities are imposed upon their military or naval officers; but without exception (so far as I can learn) the office of "judge-advocate-general," as well as that of "judge-advocate," is filled by regularly-trained lawyers, having no military or naval status.

For many years (from 1843) Mr. G. S. Watkins held the position of "law-clerk" of the Navy Department; he seems to have been the very embodiment of law-books and law in matters pertaining to the navy. It is said of his administration of the office, that there never was an appeal taken from one of his legal decisions. He died in office, His associate in office was J. A. Bolles, Esq., a lawyer of prominence. and held the office of naval solicitor for some years.

The Hon. W. E. Chandler, United States Senate, was for a short period "solicitor and judge-advocate-general," from which position he was appointed First Assistant Secretary of the United States Treasury, when, in 1880, the act was passed directing that the appointment of "judge-advocate-general" be made from officers of the navy. For extracts, etc., relating to foreign armies and navies, I am indebted to the following excellent English works,—viz., Thring's "Criminal Laws of the Navy," Clode's "Military and Martial Law," Simmons's "Courts-Martial."

W. H. SHOCK,
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ORIGIN AND DEVELOPMENTS OF STEAM NAVIGATION.

(Continued from page 60.)

1834.—Up to the year 1834 steamboats in the United States had burnt wood only. The "Novelty" burnt forty cords each trip from New York to Albany. In 1836 experiments were made with anthracite coal for fuel on board the ferry-boats in New York with success, but wood was principally used for American coast-steamers for several years after.

The advent of ocean steam navigation soon led to the almost universal use of coal,—bituminous and anthracite,—even the steamboats on the Mississippi having adopted the former.

1834.—The first steamer on the Merrimac River, Massachusetts, was called the "Herald." She was built above Pawtucket Falls, launched in 1834, and made regular trips between Lowell and Nashua when Lowell had but fourteen thousand inhabitants and Nashua a few hundred. In 1888 she was lengthened, and could carry five hundred passengers. In 1840 she was floated over the falls to Newburyport, and taken to New York, and run as a ferry-boat between New York city and Brooklyn.[1]

1835.—John F. Smith, of Charlestown, Massachusetts, September 18, 1835, patented a screw revolving in a cavity made by giving the hull the form of a double vessel from amidships to the stern, the forepart being in the ordinary shape.

Edward P. Fitzpatrick, of Mount Morris, New York, November 23, 1835, patented a spiral screw, the shaft swelling in the middle like a double cone, surrounded by a spiral thread, also wider in the middle than at the ends.

1836.—French Steamboats.—The whole number of French steamboats in 1836 was eighty-two; the majority were of small size and only suited to the navigation of the French rivers. Forty-four were passenger-boats, seventeen freight-boats, and twenty-one employed in towing ships. The aggregate horse-power of these eighty-two steamboats was two thousand eight hundred and sixty-three, an average

[1] Newburyport *Herald.*

of thirty-five horse-power to each boat. The average tonnage was estimated at one hundred and eighty tons, or fifteen thousand in all.

Twenty-seven steam-vessels were also in the French Royal Navy, eighteen afloat, six on the stocks, and three employed as *tugs*. Of the eighteen afloat, eleven had one hundred and sixty horse-power each, and seven one hundred and fifty horse-power and under, and were armed with six guns each, two being Paixhan or *steel* guns. Fifty-four steam-vessels were also preparing for the service of the Post-Office Department in the Mediterranean.

THE ORIGIN OF OCEAN STEAM NAVIGATION, 1832.

No thought was entertained of the application of steam to ocean navigation until 1832, when the subject was first brought before the public by an American citizen, a graduate of Yale College of the class of 1802, Junius Smith, LL.D., who had resided in London over forty years, engaged in active business pursuits with this country. In 1832 he crossed the Atlantic on the British ship "St. Leonard," arriving in New York in October, after a passage of fifty-four days. He returned to London in the packet-ship "Westminster," sailing from New York in December, making the passage to Plymouth, England, in thirty-two days. These two passages forced upon his mind the idea of trans-atlantic steam navigation, and writing to his correspondents in New York, under date "London, June 28, 1833," he says,—

"Thirty-two days from New York to Plymouth is no trifle; *any ordinary sea-going steamer would have run it with the weather we had in fifteen days with ease.* I shall not relinquish the project unless I find it absolutely impracticable."

After giving the subject thoughtful examination, his mind became thoroughly imbued with the project, and he entered upon it with enthusiasm, first introducing the scheme to leading business-men and bankers of London, and to shipping merchants engaged in the American trade. The novel project was received with indifference and scouted as visionary, and presenting insurmountable obstacles. These objections he regarded as the offspring of ignorant prejudice, which it was his province to overthrow. He issued a prospectus embodying facts and figures to disprove such objections, which he distributed personally. He failed to meet with the slightest encouragement, but, on the contrary, with unqualified ridicule, as a visionary, and an outspoken opposition from all the sailing-packet interest, whose craft would be endangered if the enterprise should prove successful. Nothing daunted by these difficulties, which served only to furnish him new arguments favorable to his project and to enlarge his ideas, he issued a second and then a third prospectus, giving a wider scope to his idea on a more extended basis. Thus, his first prospectus contemplated a company with one hundred thousand pounds sterling capital to build steamers of one

thousand tons, while his third prospectus proposed forming a company with one million pounds sterling capital to build steamers of eighteen hundred to two thousand tons. These prospectuses presented calculations based upon facts connected with the commerce and shipping interests of the two countries which could not be controverted, the only remaining point was to satisfy the public of the practicability of the scheme.

Here was a direct issue, for which no precedent was furnished, and it seemed for a time a formidable objection. Although the fact that a vessel might be safely and expeditiously navigated by steam-power from port to port in the coasting trade was fully demonstrated, it was universally thought impracticable to cross the Atlantic by the same means. It was an Herculean task to turn such currents of thought, but to this great change his efforts were directed. In accomplishing this he set about organizing a company under the title of "The British and American Steam Navigation Company," by securing a board of directors upon the basis of his third prospectus, as stated, with a capital of one million pounds sterling. To further this he waited upon leading merchants and bankers, soliciting the use of their names, borrowing them as a man would borrow money, with the promise to return it as soon as he could do without. After great labor he succeeded in securing a list of directors. With these he came before the public, opening books of subscription to the stock. Here it may be proper to remark that a more difficult task can scarcely be conceived than the introduction to the British public of a new project embracing such physical objections as Atlantic Ocean steam navigation for a consecutive number of days, for the reason that they are a conservative and peculiarly cautious people, slow to move, while ready with their vast wealth for great enterprises. The books of subscription were opened in July, 1836, shares were liberally subscribed, sufficient being allotted to warrant contracting for their first steamship, which was made with Messrs. Curling & Young, ship-builders at Blackwall, London. Relative to this Dr. Smith wrote his New York correspondents,—

"I have the pleasure to inform you that the directors of the 'British and American Steam Navigation Company' have contracted for the building of the largest and intended to be the most splendid steamship ever built, expressly for the New York and London trade. She will measure one thousand seven hundred tons, two hundred feet keel, forty feet beam, three decks, and everything in proportion. She will carry two engines of two hundred and twenty-five horse-power each, seventy-six-inch cylinder, and nine feet stroke. The expense of this steam-frigate is estimated at sixty thousand pounds. These large undertakings require time to mature, but I think the business will at last be done effectually."

The contract for the engines was made with Messrs. Claude, Gird-

wood & Co., of Glasgow, which firm, after completing about two-thirds of the work, was obliged to suspend and went into bankruptcy, which proved a serious disappointment, involving a year's delay. A new contract was then made with Mr. Robert Napier, of Glasgow, and as the building of the ship progressed the views of the directors enlarged, resulting in the completion of the "British Queen," of *two thousand four hundred tons*. The delay consequent upon the failure of the first contractors for the engines, coupled with the importance of practical demonstration of the feasibility of crossing the Atlantic Ocean by steam, determined the company to charter the steamer "Sirius," of about seven hundred tons, for a voyage from London to New York and return. She was dispatched from London April 1, 1838, and arrived at New York on the 17th, making the passage in sixteen days' consecutive steaming, encountering very tempestuous weather, completely demonstrating the feasibility of crossing the Atlantic by steam. She was soon succeeded by the "British Queen," which left London in July, 1839, and arrived in New York after a passage of fourteen and a half days. It is certainly of value as a matter of record to give the prospectus under which the enterprise was originated. The following is a verbatim copy of the original:

"BRITISH AND AMERICAN STEAM NAVIGATION COMPANY.

"CAPITAL, £1,000,000, IN 10,000 SHARES OF £100 EACH.

"DIRECTORS:

"Henry Bainbridge, Esq., Chairman,

"Chas. Enderby, Esq., Col. Aspinwall, U. States Consul,
"Capt. Thomas Larkins, Junius Smith, Esq.,
"Capt. Robt. Locke, Jos. Robinson Pim, Esq.,
"Capt. Robt. Isaacke, Liverpool,
"Paul Twigg, Esq., Dublin, Jas. Beale, Esq., Cork.

"Bankers—Messrs. Puget, Bainbridge & Co., 12 St. Paul's Churchyard.

"Secretary—Macgregor Laird, Esq.

"The object of this company is to establish a regular and certain communication by steamships between Great Britain and the United States. The vessels are intended to depart alternately from London and Liverpool to New York; their average passage will not exceed fifteen days. The company's first vessel, the 'British Queen,' has capacity for five hundred passengers, twenty-five days' fuel, and eighty tons measurement goods, exclusive of provisions, stores, etc.

"The successful voyages of 'Sirius' and 'Great Western' steamships having placed the success of the undertaking beyond a doubt,

the Directors are now preparing contracts for other vessels of similar description to the 'British Queen,' and will be able in 1839 to dispatch their vessels for New York on the 1st and 16th of each month from London and Liverpool alternately.

"Applications for shares may be made to Macgregor Laird, Esq., at the Company's offices, 78 Cornhill; to Buxendale, Tathem, Upton & Johnston, 7 Great Manchester Street, London; to Isaac Miller, Esq., Liverpool, and to Boyle, Low, Pain & Co., Duane Street, Dublin."

Such was the modest prospectus under which a system of ocean steam navigation, now extending throughout the entire globe, was inaugurated.

The Duke of Wellington, in answer to a letter addressed to him by Dr. Junius Smith, replied "he would give no countenance to any scheme which had for its object a change in the established system of the country."[2]

1830.—THE FIRST STEAMERS IN CHINA.—In the "Life of E. C. Bridgeman, the Pioneer of American Missions in China," the arrival of the first steamer at Macao is thus mentioned in his diary:

"*May* 1, 1830.—Arrived at Macao on the 19th (April) in the steamer 'Forbes,' the first ship of the kind that has ever visited these shores.. She's a wonder to the Chinese; they call her *Fo Shune*,—The Fire-Ship."

In 1832 a Canton paper contained an advertisement of the steamer "King-fa." It said, "She carries a cow, a surgeon, a band of music, and has rooms elegantly fitted up for cards and opium-smoking."

In 1835 an attempt was made by the foreign residents to place a small steamboat called the "Jardine" upon the Canton River, to run between Lintin, Macao, and Whampoa. In consequence of the opposition of the Chinese authorities, as shown in the following correspondence, the undertaking was temporarily abandoned. The editor of the Canton *Register* remarks, "We understand that the project of running the steamer in the way set forth in the letter is not abandoned, notwithstanding the deputy-governor's refusal to accede to the proposition of the whole of the foreign community of Canton. Perhaps the arrival of the new governor will be a favorable opportunity to reurge this reasonable and judicious plan of communication with the shipping at Lintin and with Macao. A united and determined perseverance on the part of the foreigners is all that is wanted to carry this or any other reasonable project into effect.

"We notice with unfeigned pleasure the unanimous feeling of the foreign community on this subject. The name of every foreign mer-

[2] These facts were furnished to the New York *Evening Post* by Henry Smith, of the firm of Wadsworth & Smith, New York, who is in possession of all the correspondence from the first inception of the enterprise.

chant in Canton was signed to the letter to Howqua, including the three East India Company's agents, whose names head the list. *O si sic omnia!*"[3]

"To Howqua, Senior Hong Merchant —— Canton:

"Sir,—We, the undersigned, merchants of all nations residing at Canton, having for years past experienced much inconvenience from the tardiness and uncertainty of our communication with Macao, where our wives and children reside, as well as from the difficulties attending the conveyance of letters to and from vessels arriving and departing, have lately procured from Europe, at considerable expense, a traveling boat of a modern construction propelled by steam and capable of moving against wind and tide.

"The said boat having arrived at Lintin, we intend to order her up without delay; and, as the officers stationed at the different forts, never having seen a traveling boat of this description, may entertain erroneous ideas regarding her, and may attempt to impede her passage up the river, which might terminate in disaster, the motive of our now addressing you is to request the favor of your forwarding a true statement to the government officers, in order to preclude the possibility of misunderstanding or trouble.

"Being all personally known to you, it is superfluous to assure you of our peaceable dispositions and the rectitude of our intentions.

"Our boat is purely a passage-boat, and no cargo can ever be admitted. Neither is she provided with a defensive weapon of any description, such is our unbounded confidence in the protection of the Imperial government. Any officer doubting our statement can satisfy himself by personal inspection.

"The regularity of communication thus established will leave no inducement to resort any longer to Chinese fast-boats for the conveyance of letters or passengers, which has so frequently led to petitioning at the city gate, removing at once one of the chief sources of trouble to the Hong merchants as well as to ourselves.

"The boat is expected at Canton in seven days, when we shall be happy to see you, sir, or any gentleman of your honorable country, on board.

"With compliments we affix our names.

"We herein state her length 85 feet, beam 17 feet, draught of water, 6 feet. Reduced to Chinese feet in the Chinese letter, being 70 feet length, 14 beam, 5 draught of water."

To this letter the Hong merchants replied:

"We respectfully inform you, benevolent elder brethren, that yesterday we received your letter, the contents of which we immediately

[3] Canton *Register*, December 29, 1835.

submitted to *Tuhheën*. Now, we have received the *Tuhheën's* reply, which we have faithfully transcribed, and we present it praying that you, benevolent elder brethren, will all inform yourselves thereof. You, gentlemen, and the established authorities of your honorable country, should obey the orders that the said steamship is not permitted to enter the port. When there are letters, ships' boats, as heretofore, should be ordered to make a clear report and bring them up for delivery. We earnestly request your particular attention to this matter. Directed to Mr. Jardine and the constituted gentlemen for their information.

"Signed by *Wootaeyung*, and ten others.

"11th moon, 6th day,—25th December, 1835."

The acting-governor also wrote to Hong merchants in reply to the petition of the foreign merchants:

"*Ke*, Guardian of the Prince, Acting Governor-general of the two *Kwang*, *Seunfoo* of Kwantung, proclaims to the Hong merchants, who have presented the petition of the English foreign merchant *Tanele* (Daniel) and the others in reply—

"I have examined, and find that each ship of every nation arriving in the Chinese waters (of Canton province) have hitherto been cargo-ships, and, consequently, they have been permitted to come up to Whampoa; with these exceptions, ships are not allowed to enter the port. As the ships that remain at anchor in the offing have letters for delivery and such-like business, heretofore it has been the custom to order ships' boats to make a clear report at the custom-houses, and then allow them to enter the port; these are the reported and fixed regulations. Now, as the English have brought hither a steamship, it is proper to manage the affair agreeably to the regulations. The said Hong merchants must immediately transmit the orders to the foreigner of the said steamship, that if he has letters he should order ships' boats to make a clear report, and then enter the port and deliver the letters, he must not hastily bring in the steamship; if he presumes obstinately to disobey, I, the acting-governor, have already issued orders to all the forts that when the steamship arrives they are to open a thundering fire and attack her. On the whole, since he has arrived within the boundaries of the Celestial Dynasty, it is right that we should obey the laws of the Celestial Dynasty. I order the said foreigner to ponder this well and act in trembling obedience thereto.

"TAOUKWANG, 15th year, 11th moon, 6th day,—25th December, 1835."

Hoppo followed this letter with this edict three days later:

"*Pang by Imperial appointment Controller-General of the Customs at Canton, etc.:*

"I have examined and find that the reported and fixed regulations are that the foreign ships of every nation, when they arrive in the waters of Canton, should, as the law directs, make a clear report and receive a pilot to bring them up to Whampoa. In the transmission of letters hitherto open boats have been used to enter and leave the port, which waited to be examined; this has been the custom for very many years, and there has neither been delay nor impediment; and most assuredly these regulations are unchangeable. It is now authenticated that the English have petitioned respecting a newly-built steamship. This is scarcely a credible affair. She is not permitted to enter the port. I order the head Hong merchants and all the others immediately to direct their most assiduous attention to the explanation of the orders to the said foreigners, that they should be obedient to the fixed regulations as established by the Emperor, and that they should use ships' small open boats for the conveyance of letters in going and returning, and reverently obey the laws of the Celestial Dynasty; they are not allowed presumptuously to make changes and oppose the prohibitory laws. Forthwith obey my former orders on this business, and await the reply of the acting-governor.

"TAOUKWANG, 15th year, 11th moon, 9th day,—December 28, 1835."

The doubt expressed by *Pang* as to the credibility of the "affair" of the steamer is pointed at the manner in which he supposes she may be employed; he does not believe that she is merely intended as a passage-boat and packet, and seems afraid there is some ulterior design on the part of the foreigners.[4]

In Williams's "Middle Kingdom" (vol. i. pp. 573, 574, edition 1876) there is a description of a steamer which "was attached to drawings made by the Chinese when the English attacked Canton in 1841:"

"She's more than three hundred cubits long,
And thirty-odd in height and breadth;
Iron is used to bend her stiff and stout,
And she's painted black all round about;
Like a weaver's shuttle is her shape;
On both sides carriage-wheels are fixed,

[4] "The steamer 'Jardine' was sailed out as a schooner from Aberdeen (Scotland), and arrived in September, 1835, at Lintin, where her machinery was put in working order; and she made several trips to the Bogue (Bocca Tigris) in November, being intended as a passenger and mail conveyance between Macao, Lintin, and Canton. But, although every foreign merchant residing at Canton signed a letter to Howqua for submission to the governor, stating the purpose of her employment and engaging that she should be restricted to it, the chief authorities refused consent to her entering the river; and this was peremptory, notwithstanding the admiral's disposition to admit her, having visited her and allowed her to take his own junk in tow up and down Anson's Bay, after which he freely acknowledged that there could be no harm in her running."—GIDEON NYE, in *China Review*, Hong-Kong, 1875.

And, using fossil coal to make a fire,
They whirl around as the race-horse flies.
Of white cloth all the sails are made,
In winds both fair and foul she goes.
On her bow is the god of the waves,
At stem and stern is a revolving gun;
Her form is truly terrific to men.
The god of the North displaying his sanctity,
The sunken rocks there shoaled the steamer;
All who saw it witnessed to the justice of heaven.
None of the plans of the foreigners took effect,
Which greatly delighted the hearts of men."

In this connection, referring to the American steamers trading in Canton waters, Mr. Gideon Nye wrote,—

"Premising that several steamers under the British flag preceded the coming of any but a very small one under our own, I merely recall that this one was the 'Firefly,' sent out in pieces by R. B. Forbes, Esq., of Boston, to run between Canton and Whampoa; that he sent next the 'Spark' (that is still running to Macao, after having been lengthened about sixteen feet), also in pieces, chiefly for account of the late Mr. J. B. Endicott; and another called the 'Midas,' that went hence to Brazil. These all came out during my absence from Canton,—that is, after 1845 and before 1850.

"During the same period three British steamers were running between Canton and Hong-Kong,—the 'Corsair,' the 'Canton,' and the 'Hong-Kong.' In 1854 the late Mr. Robert Sturgis, Mr. J. B. Endicott, and myself sent to New York for a larger class steamer for this river trade, and in her (under command of Captain Sampson) came the late Captain George U. Sands as chief engineer; she being called, I think, the 'Fung Shung' when she left New York, but the new name of 'River Bird,' suggested by my partner, Mr. Tuckerman (late United States Minister in Greece), was given her here. In 1854 the steamer 'Carolina' was bought for me in California, and brought over by Captain Sampson in 1855; but I sent her to Calcutta, where also the 'River Bird' was sent by Mr. Sturgis after the war of 1856 stopped the river traffic. Hostilities here continued until 1860, though after the treaty of Tientsin, in 1858, there was a partial resumption of business. Meantime, Captain Sampson had returned to California and brought over the 'Williamette.' Soon after the 'White Cloud' came out from New York, chiefly for Mr. Sturgis's and Captain Sands's account, and next the 'Hankow,' both under steam, followed later by the 'Kiushau' in pieces, to be set up at Whampoa. The 'Fire-Dart' was sent down from Shanghai, followed thence, later, by the 'Po-yang' and 'Kiu-Kiang.' The 'Hankow' was destroyed by fire here, and the 'Po-yang' was lost in a typhoon near Macao."[5]

[5] Gideon Nye, author of "History of American Commerce with China," to Thomas Gibbons.

1836.—PROPOSED INVULNERABLE STEAM BATTERY AND TORPEDO-BOAT.—The New York *Times*, in 1836, says, "Clinton Roosevelt, of New York, has invented an invulnerable steam battery. It is rendered invulnerable by making the bow and stern of the vessel alike sharp and plating them with polished iron armor, with high bulwarks, and a sharp roof plated in like manner, with the design of glancing the balls. The means of offense are a torpedo made to lower on nearing an enemy, and driven by a mortar into the enemy's side under water, where, by a fusee, it will explode. There is also a large cannon at each end of the battery, and mortars to throw combustibles upon the sails and decks of opponents. There are means to prevent balls reaching any part of the machinery, and the design is always to fight the vessel end-on."

This device seems not to have been put to practical experiment, but most of the ideas have been adopted or incorporated in vessels of a later date.

1836.—COMMODORE BARRON'S PROW-SHIP.—A model of Commodore James Barron's prow-ship was exhibited in the rotunda of the Capitol at Washington in 1836, and is now preserved in the Seamanship building at the Naval Academy, Annapolis, Maryland. Its inventor thus described this, the first steam ram ever proposed, under date February 11, 1836:

"I would propose that a vessel be constructed of solid logs of light timber, the gravity of which would not exceed four-tenths that of water, and be of such bulk that the upper part of the solid log-work of the centre vessel would float six or eight feet above its surface.

"Let this vessel, or combination of vessels, be of large dimensions, say from one hundred and fifty to two hundred or two hundred and thirty feet long, and seventy or eighty feet wide, and resembling in their form a steamboat of the treble construction. The prow should be very strong, and for a few feet aft a little sharp; but not so much so as to impair its strength. The point of it should not be reduced to a less thickness than three or four feet, and not exceeding in its whole length beyond the bow of the centre vessel fifteen or twenty feet, and that prominence covered with iron plates from three to four inches thick, eight or ten inches wide, and six or eight feet long on each arm, formed into an acute angle to fit the shape of the prow, and enlarged at their junction on the point of the prow to about eight or ten inches in thickness, and rounding outwards in sharp-pointed knobs, cut in large diamond form. These plates should be placed four or five inches apart from each other, and let half their thickness into the wood, which will produce a saw-shaped space upon the prow, and prevent the glancing of the vessel from her object, either up or down, or sideways.

"The logs that form the prow should be at least two feet square, thirty or forty feet long, and of the hardest and toughest wood, such

as oak or elm, and occupy a space of ten or twelve feet up and down, and be supported on each side by the same kind of timber. The iron plates should be securely bolted through the whole mass, but particularly so through these logs of hard timber. To protect the crew and machinery from shot, let the guard-vessels without the centre vessel be built twelve or fifteen feet wide, and of solid white pine timber, and projected a sufficient distance from the sides of the centre vessel to embrace the paddle-wheels. These barricade vessels should be of sufficient elevation to cover the upper part of the paddle-wheels. Each of the lower parts must form a bottom similar to the centre one, and be secured to it forward and aft by the cross logs of which the centre vessel is constructed, projecting from her sides to such a distance as to allow spaces for the paddle-wheels on each side, and from as many points above the water between the paddle-wheels as might be required for strength.

"The water is admitted to these paddle-wheels between the bows of these vessels through a channel formed by a long inverted arch, the lowest point of which must descend below the level of the lower part of the wheels. The solid log-work, forward and aft of the centre vessel, should form a mass of at least twelve or fifteen feet in thickness, or as the side vessels.

"Over the top of these vessels lay a tier of logs about two feet square, which will serve as a protection to the crew and machinery from any assaults by boarding, etc. The middle vessel may be hollowed out, at a proper distance from her extremes, if more buoyancy is required than the timber itself gives, except amidships, and there the log-work should be continuous from the prow all the way aft.

"The object of this vessel is to destroy men-of-war by running into them with such impetuosity as to break down their sides sufficiently to admit water in such quantities as would defy all possible efforts to prevent immediate sinking.

"Only about ten or twelve feet of the prow of this vessel ought to be allowed to strike the ship that is assailed; the other parts, above and below, should recede or incline aft, and this ten or twelve feet space should be so situated as to come in contact with the side of the enemy five or six feet above the water and five or six feet below its surface. The resistance to the stroke would be less impeded than it would be were it given by a prow of greater extent, and of course it would be more certain to pierce or break down that part of the side of the enemy's ship which it might come in contact with. Three steam-engines, of one hundred and twenty horse-power each, would propel such a vessel at the rate of eight or ten miles, or more, per hour, and should be preferred to larger ones, as they would be less liable to damage from the shock to which they might be exposed when the vessel should come at her full speed in contact with the enemy.

"Let those who are curious or doubtful of the efficiency of this plan calculate the effect which would be produced on a stationary body by a concussion so violent as would be occasioned by a stroke of the prow of this massive vessel. To make it apparent that the strongest ships in the world are entirely inadequate to resist such force, it need only be observed that they seldom come in contact with each other with any violence without sinking or sustaining a most destructive degree of damage.

"Ancient as well as modern history furnishes us with many proofs of the decided effects of this mode of attack. The Romans and Carthaginians were in the practice of running into each other's vessels at their greatest speed, impelled by their oars; and it is recorded of them that when they found their enemies entangled with their friends, so as to render them stationary for the moment of their assault, that it seldom failed to produce that description of destruction contemplated by the adoption of this invention; but the power of steam and the solid construction of this vessel would give this mode of attack a decided advantage over all other attempts of a similar nature ever heretofore resorted to, and beyond a doubt insure success.

"The proof of the effects of an attack made by a whale on the ship 'Essex' of New Bedford, in the year 1819, is conclusive that no construction of a ship now known could resist the shock of such a vessel as the one I have described. A circumstance not very dissimilar occurred to Captain Jones, in the United States ship 'Peacock,' in the Pacific Ocean.

"The instances of destruction occasioned to vessels by one running into another are too numerous to admit of a doubt that if the plan recommended above should be adopted on a proper scale, it could never fail of effecting its object.

"The rudder is attached to the centre vessel, and must be moved by a wheel, which may be placed on the upper surface of the centre vessel, under the roof or main covering, either forward or aft; but I should prefer its being aft, and it should be considerably forward and lower down than in ordinary cases. A breast-work should be raised aft, for the protection of officers and others; also for the chimneys and steam-pipes, in their proper places, which should be circular.

"The timber alluded to in the above description is the white pine,—'*Pinus strobus*,'—poplar,—'*Liriodendron tulipifera*,'—and some species of the gum, none of which exceed four-tenths of the gravity of water.

"The prow mentioned in the first part of this description is not of such a form as I would either use myself or recommend to those whom I would allow to use my invention: that form might become fixed in the body assailed, but the form represented by the drawing will surely clear itself.

"In speaking of the different presentations of the prow and its momentum, it is to be considered as in contact with a solid body.

"Dimensions, etc., of the steam prow-ship:

	Length. Feet.	Width. Feet.	Depth. Feet.	Number of Cubic Feet.
"Middle vessel	150	20	30	90,000
Side vessels . . . . . each	125	12	30	both 90,000

Number of cubic feet in the three vessels, 180,000.

Weight of each cubic foot of white pine in the three vessels, 24 pounds.

Specific gravity of the three vessels, 4,320,000 pounds, or 1968 tons.

Specific gravity of the three vessels multiplied by their velocity gives, as the whole momentum of the three vessels, 43,200,000 pounds.

Momentum on each foot of the prow, 900,000 pounds."

1836.—STEAM TOW-BOATS ON THE DELAWARE.—Steam tow-boats were introduced upon the Delaware in 1836, as appears from the following advertisement which appeared in the first number of the Philadelphia *Ledger*, March 25, 1836:

"PHILADELPHIA STEAM TOW-BOAT CO.

"A meeting of the stockholders will be held on Saturday evening next, at the room of the Board of Trade, in the Exchange, at 7 o'clock.

"Merchants generally, who take an interest in facilitating the navigation of the Delaware by means of steam tow-boats, are respectfully invited to attend.

"By order of the Board of Directors,

"D. B. STACEY, *Secretary.*"

1836.—REGISTERED STEAM-VESSELS OF GREAT BRITAIN.—The number of registered steam-vessels in Great Britain in 1836 was three hundred and ninety-seven. One hundred and fifty-three were under fifty tons, and one hundred and eighteen more under one hundred tons. The number above one hundred tons was one hundred and twenty-six. The largest, the "Monarch," of London, measured only five hundred and eighty-seven, and no other exceeded four hundred tons. The newspapers of this year speak of "an *immense* steam-frigate, to be called the 'Gorgon,' to be built in London. She is to be eleven hundred tons, and will carry twelve guns, and is larger than the old seventy-fours."

In 1837 the number and tonnage of steam-vessels belonging to the British empire, distinguishing British possessions in Europe from the British plantations, was—

	Vessels.	Tonnage.
England	432	37,240
Scotland	109	13,368
Ireland	87	18,437
Total for United Kingdom	628	69,045
Isles of Guernsey, Jersey, and Man	6	832
British Plantations	44	8,411
Total for all	678	78,288

THE FIRST PRACTICAL SCREW-STEAMERS.

1836.—Captain John Ericsson,[6] a native of Sweden, who had for some time previous to the date of his patent for propelling vessels been a resident in England, and was well known as a mechanician of originality and skill, obtained a patent in England, July 13, 1836, for a spiral propeller consisting of two broad thin hoops with eight fans, each fixed on a shaft, the outer hoop revolving in a contrary direction and at a greater velocity to the inner one. This propeller was to be entirely submerged *abaft the rudder*, the shaft passing through the stern-post; the rudder was divided into two parts, connected by a strong iron stay on each side, having a wide bend to allow the rudder to traverse clear of the shaft. Before the construction of his first vessel, Captain Ericsson experimented in a circular bath in London with a model boat, which was propelled by a screw. This model boat was fitted with a small engine supplied with steam by a pipe leading from a steam-boiler over the centre of the bath and descending to within a foot of the water-line, where it was branched off by a swivel-joint and connected with the engine in the boat. Steam being admitted in this pipe, the engine in the boat was put in action, and motion was thus communicated to the propeller. This model, though less than three feet long, performed its voyage about the basin at the rate of upward of three miles an hour.

His next step in the invention was the construction of a wooden boat forty-five feet long, eight feet beam, three feet draught of water, with *two propellers*, each five feet two inches in diameter. So successful was this experiment that when steam was turned on for the first time the boat moved at once upward of ten miles an hour without any alteration in her machinery. This vessel was named by the inventor the "Francis B. Ogden," in compliment to the United States consul at Liverpool, who was the first to appreciate and encourage his efforts. The vessel was built at Wapping, by Mr. Gulliver, boat-builder, and was constructed solely for the purpose of testing Ericsson's propeller.

The following description of her motive-power was published in the London *Mechanics' Magazine* for June, 1837:

"The propelling apparatus is placed at the stern, and works entirely under the water. It consists of a peculiar application of the old and well-known principle of the water-screw, by which a great propelling power is concentrated in a small space. Of the degree of power concentrated no better proof can be adduced than the fact that the speed of four and a half knots, against wind and tide, was produced by an apparatus measuring only five feet two inches in diameter, of two

[6] Eric is in Scandinavian countries the same as Enrico in Italian, Enrique in Spanish, Heinrich in German, Henri in French, and Henry in English. So that Mr. Ericsson may be called Mr. Henryson.

feet two inches wide, weighing only six hundred and fifteen pounds, and worked by a high-pressure engine having two cylinders of fourteen-inches stroke and twelve inches diameter, and which, during the experiment, made only sixty strokes per minute, and showed a pressure of not more than fifty pounds to the square inch. The new propelling apparatus consists of two short cylinders of thin wrought iron supported by arms of a peculiar form, which are placed entirely under the water at the stern and made to revolve in contrary directions round a common centre. To the outer periphery of each cylinder is attached a series of spiral planes or plates, which may be placed at any angle, according to the effect sought to be obtained, whether it be great speed or great propelling power.

"The apparatus may be made to ship and unship at pleasure, the engine that works it may also be loco-movable, so as to be worked upon deck and any part of the deck, and in these two peculiarities we are inclined to think the chief advantage of this new step in steam-navigation will be found to consist. Sailing-vessels may by this means command all the aid that steam can give them without divesting themselves of any peculiar fitness for long sea voyages or undergo any change in their original construction."[1]

As noticed, the "Ogden" when first tried, April, 1837, upon the Thames, attained a speed of *ten miles an hour*. She subsequently towed schooners of one hundred and forty tons seven miles an hour, and the American packet-ship "Toronto," of six hundred and fifty tons register, at the rate of more than five English miles an hour, according to the following certificate:

"PACKET-SHIP 'TORONTO,'
"IN THE THAMES, 28th May, 1837.

"We feel pleasure in certifying that your experimental steamboat, the 'Francis B. Ogden,' has this morning towed our ship at the rate of four and a half knots through the water, and *against* tide.

"E. NASHLY, *Pilot*,
"H. R. HOOEY, *Mate*.

"TO CAPTAIN ERICSSON."

The London engineers looked upon the experiment with silent neglect, and when the subject was laid before the British Admiralty it failed to attract its favorable notice. Accounts of the experiments, with favorable mention, appeared in the *Times*, and other public journals; also in the *Civil Engineer's and Architect's Journal*, the London *Journal of Arts and Sciences*, the London *Mechanics' Magazine*, and similar publications.

Perceiving its peculiar and admirable fitness for ships of war, Erics-

[1] Vol. xxvii. p. 180.

son was confident that the Lords of the Admiralty would at once order the construction of a war-steamer on the new principle. He therefore invited them to an excursion in tow of his experimental boat. Accordingly the Admiralty barge was ordered to Somerset House, and Ericsson's little steamer was lashed alongside of it.

A lecture before the Boston Lyceum in December, 1843, by John O. Sargent, supplies the following graphic description of the trip:

"The barge contained Sir Charles Adam, senior Lord of the Admiralty; Sir William Symonds, surveyor of the British navy; Sir Edward Parry, the commander of the second British North Pole Expedition; Captain Beaufort, the hydrographer of the royal navy, and other scientific and naval officers.

"In anticipation of a severe scrutiny from so distinguished a personage as the chief constructor of the British navy, the inventor had carefully prepared plans of his mode of propulsion, which were spread on the damask cloth of the magnificent barge. To his utter astonishment, as we may well imagine, this scientific gentleman[8] did not appear to take the slightest interest in his explanations. On the contrary, with those expressive shrugs of the shoulder and shakes of the head which convey so much without absolutely committing the actor, —with an occasional sly, mysterious undertone remark to his colleagues,—he indicated plainly that though his humanity would not permit him to give a worthy man cause for unhappiness, yet 'he could an' if he would' demonstrate by a single word the utter futility of the invention.

"Meanwhile, the little steamer proceeded at a steady progress of ten miles an hour through the arches of the Southwark and London bridges towards Limehouse and the steam-engine manufactory of the Messrs. Seward. Their lordships having landed and inspected the huge piles of the marine-engines intended for his Majesty's steamers, with a look at their favorite propelling apparatus, the 'Morgan paddle-wheel,' re-embarked, and were safely returned to Somerset House by the noiseless and unseen propeller of the new steamer.

"On parting, Sir Charles Adam, with a sympathizing air, shook Ericsson cordially by the hand, and thanked him for the trouble he had been at in showing him and his friends this interesting experiment, adding that he feared he had put himself to too great an expense and trouble. Notwithstanding this ominous ending of the day's excursion, Ericsson felt confident that their lordships would not fail to perceive the importance of the invention. To his surprise, however, a few days afterwards a letter written by Captain Beaufort, at the suggestion, probably, of the Lords of the Admiralty, was put into his hands, in which that gentleman, who had witnessed the experiment, expressed his regret that their lordships had been very much disappointed at its

[8] Sir William Symonds.

results. The reason was altogether inexplicable to the inventor; for the speed attained at the trial far exceeded anything that had been accomplished by any paddle-wheel steamer on so small a scale.

"An accident soon relieved his astonishment. The subject having been started at a dinner-table where a friend of Ericsson was present, Sir William Symonds ingeniously remarked that 'even if the propeller had the power of propelling a vessel, it would be found altogether useless in practice, because the power being applied in the stern, it would be absolutely impossible to make the vessel steer.' It may not be obvious to every one how this naval philosopher derived his conclusion; but his hearers doubtless acquiesced in his oracular proposition, and were amused at the idea of 'undertaking to steer a vessel when the power was applied in her stern.'

"But we may well excuse the British Admiralty for exhibiting no interest in the invention when the engineering corps of the empire arrayed itself in opposition to it, alleging that it was constructed upon erroneous principles and was full of practical defects; regarding its failure as too certain to authorize any speculation of its success. The plan of screw propulsion was specially submitted to many distinguished engineers, and publicly discussed in the scientific journals; and there was scarcely any one but the inventor who refused to acquiesce in the numerous demonstrations proving the vast loss of mechanical power which must attend the substitute for the old-fashioned paddle-wheel."

In August, 1837, a lithograph of the apparatus of the "F. B. Ogden" was published in London. The machinery was subsequently removed and applied to other purposes.

THE "NOVELTY."—In the winter of 1837 the "Novelty," a canal-boat, was fitted with Ericsson's propeller, and sent to ply on the canal between Manchester and London, England. The propellers were but two feet six inches in diameter, and were driven by an engine of ten horse-power; nevertheless, the boat realized a speed of eight or nine miles an hour. This is the first screw-boat ever employed for commercial purposes, but in a short time she was laid up, owing to the failure of her owners.

Although Ericsson's invention was treated with indifference by the highest naval scientific authority of England, Mr. Ogden did not lose his interest or belief in it. He was distinguished for his attainments in mechanical science, and is entitled to the honor of having first applied the principle of the expansive power of steam, and of having originated the idea of right-angular cranks for marine engines. His practical experience and long study of the subject—for he was the first to stem the waters of the Ohio and Mississippi, and first to navigate the ocean by steam alone—enabled him at once to perceive the truth of the inventor's demonstrations.

Other circumstances consoled Ericsson for the rejection of his pro-

peller by the Admiralty. The subject was brought to the notice of Captain Robert F. Stockton, United States navy, then in London, who was induced to accompany the inventor on one of his experimental trips on the Thames. Captain Stockton must be credited with being the first naval officer who dared to act upon the suggestions of Ericsson as to the application of his propeller to ships of war. He saw the importance of the invention, and his acute judgment enabled him to predict it was destined to work a revolution in naval architecture. After making a trip in the "Ogden," from London Bridge to Greenwich, he ordered Mr. Ericsson to build for him forthwith two *iron* boats, for the United States, with steam machinery and propeller on the plan rejected by the British Admiralty. "I do not want," said Captain Stockton, "the opinions of scientific men: what I have seen this day satisfies me." At a dinner at Greenwich, Captain Stockton made several predictions respecting the new invention, all of which have been realized. To the inventor he said, in words of no unmeaning compliment, "We will make your name ring on the Delaware as soon as we get the propeller there."

Captain Stockton not only ordered, on his own account, two *iron* boats, but at once brought the subject before the government of the United States, and had numerous plans and models made at his own expense, explaining the peculiar fitness of the new invention for ships of war. So completely was he persuaded of its importance, and so determined his views should be carried out, that he assured the inventor the government of the United States would test the propeller on a large scale; Ericsson was so confident that the perseverance and energy of Captain Stockton would accomplish all he promised that he abandoned his professional engagements in England and set out for the United States at once.

THE "ENTERPRISE."—Before leaving England, however, he built for Mr. John Thomas Woodhouse an iron screw-propeller, which was named the "Enterprise," to run as a passenger-boat on the Ashby-de-la-Zouch Canal. Her length was about seventy feet; beam, seven feet; and her engine about fourteen horse-power; her speed, from nine to ten miles an hour. She commenced running on the canal in August, 1839, and having run the season through without profit was afterwards used as a steam-tug on the Trent and Mersey.

The *Naval Magazine* for November, 1837, published at New York under the auspices of the United States Naval Lyceum, and which contains a description and drawing of Ericsson's propeller for steamboats, says, "We do it from a conviction that this ingenious engineer has discovered a most valuable improvement in the mode of propelling vessels by steam," and adds, "If it succeeds on a large scale as well as it has on the trials already, *it must create an entire revolution in the mode of propelling by steam.*"

1838.—THE "ROBERT F. STOCKTON."—The iron vessel built for Captain Stockton was launched from the yard of Messrs. Laird & Co., of Birkenhead, the 7th of July, 1838, and named the "Robert F. Stockton." A drawing of this vessel as rigged for her voyage across the Atlantic illustrates Woodcroft's "History of Steam Navigation."

On a trial below Blackwall the 12th of January, 1839, in the presence of thirty gentleman, a distance of nine miles (over the land) was passed with the tide in thirty-five minutes, proving her speed in the water to be between eleven and twelve miles an hour. The "Stockton" was seventy feet long, had ten feet beam, and drew six feet nine inches of water. The diameter of her propeller was six feet four inches.

To test the power of her propeller, she was made to tow four coal-barges with upright sides and square ends, each of fifteen feet beam and drawing four and three-quarters feet of water, from Southwark to Waterloo Bridge. Steam being set on, full speed was attained in one minute, and the distance between the bridges, which is precisely one mile, was performed in eleven minutes.

Considering the square form of the barges, and that they presented together fifty-eight feet one inch beam, with an average draught of four feet four inches, besides the sectional area of the steamer, which was fifty-three square feet, and that the propeller, only six feet four inches in diameter, occupied less than two feet six inches in length behind the stern of the boat, the result was considered very satisfactory.

The "Robert F. Stockton" left England for the United States early in April, 1839, under the command of Captain Crane. Her crew comprised four men and a boy. She was forty days making the passage under sail, and for his daring in crossing the Atlantic in this small vessel Captain Crane was presented with the freedom of the city of New York. Her machinery was arranged so that either one or two propellers could be used. In her experiment on the Thames she was worked with a single propeller.

THE "NEW JERSEY."—In 1840 Captain Stockton sold the "R. F. Stockton" to the Delaware and Raritan Canal Company, permission having been obtained, by a special act of Congress, to run her in American waters, her name at the same time being changed to that of "New Jersey." From that date she was in constant employment as a steam-tug on the Delaware and Schuylkill, both winter and summer, as she was the only vessel capable of towing through the drift ice, paddle-wheel steamers being of little use for that purpose. The "New Jersey" was the first screw-propeller vessel practically used in America, although numerous unsuccessful experiments with the screw had been previously made.

In the autumn of 1839, Ericsson came to the United States, and still lives (1883) in a green old age to plan new and to perfect his old

inventions on steam navigation. Before he had been long in America he had an opportunity of introducing his propeller into the United States navy.

THE "PRINCETON."—The "Princeton" war-steamer was built and fitted with Ericsson's screw; the engines also designed by him were so constructed as to lie beneath the water-line, and therefore more out of reach of shot. These were the first engines made upon this principle, and we believe her engines, though compact and eminently successful, have never been duplicated in any other vessel in the United States.[9]

THE "POMONE."—When Ericsson left England he consigned his interests to the guardianship of Count Adolph E. de Rosen, and in 1843, Count Rosen received an order from the French government to fit a 44-gun frigate, the "Pomone," with a propeller on Ericsson's plan, with engines of two hundred and twenty horse-power, which were to be kept below the water-line. In 1844 the English government had the "Amphion" frigate fitted on the same plan, with engines of three hundred horse-power. These were the first engines in Europe which were kept below the water-line. They were also the first direct-acting horizontal engines employed to give motion to the screw. Both vessels were completely successful.

1836.—SMITH'S ARCHIMEDEAN SCREW.—In 1835, Francis P. Smith, a farmer at Hendon, first directed his attention to screw propulsion. In the spring of 1836 he obtained the co-operation of Mr. Wright, a banker, and his first patent was granted the 31st of May, 1836. A model boat, constructed under his supervision and fitted with a wooden screw, was then exhibited in operation upon a pond on his farm at Hendon and at the Adelaide Gallery in London. At the Adelaide Gallery it was inspected by Sir John Barrow, the secretary of the Admiralty, and Messrs. Harris & Bell, of Alexandria, offered to purchase the invention for the Pasha of Egypt; but their offer was declined.

The results with the model boat were so satisfactory that in the autumn of 1836, Mr. Smith and his friends constructed a boat of six tons burden, and about six horse-power, to further demonstrate the advantages of the invention. This boat was fitted with a wooden screw of two turns. On the 1st of November, 1836, she was exhibited to the public in operation on the Paddington Canal, and continued to ply there and on the Thames until the month of September, 1837. During one of her trips on the Paddington Canal, in February, 1837, an accident occurred which first pointed out the advantage of diminishing the length of the screw. The propeller having come in contact with some object in the water, about one-half of its length was broken away, and no sooner had this been done than the boat quickened her speed and was found to realize a better performance than before. In consequence

[9] A full description of the "Princeton" will be found in the next chapter.

of this discovery, a new screw was fitted, of a single turn, and with the vessel thus improved, very satisfactory results were obtained.

Although these experiments established the eligibility of the screw as a propeller for canal and river vessels, nothing had yet been done that was known or remembered to show that it was applicable to vessels navigating the sea. To this point, therefore, Mr. Smith directed his attention, and he determined to carry his small vessel to sea with the view of ascertaining if she would there exhibit the same efficiency displayed in canal and river navigation. Accordingly, on a Saturday evening, September, 1837, he proceeded in his miniature vessel from Blackwall to Gravesend, and having at three in the morning taken in a pilot, went on to Ramsgate, and reached that place during divine service. From Ramsgate he proceeded to Dover, where a trial of the vessel's performance was made in the presence of Mr. John Wright and Mr. Peak, civil engineer. From Dover he went on to Folkestone, and thence to Hythe, returning again to Folkestone. The distance between Hythe and Folkestone, about five miles, was accomplished in three-quarters of an hour. On the 25th of September he returned to London, in weather so stormy and boisterous that it was accounted dangerous for any vessel of so small a size to put to sea. The courage of the undertaking, and the unexpected efficiency of the propeller, rendered the little vessel during this voyage an object of great interest; and her progress was watched with solicitude from the cliffs by nautical and naval men, who were loud in their praises. These favorable impressions reached the Admiralty, and produced a visible effect there.

In March, 1838, the Lords of the Admiralty requested Mr. Smith to have the vessel tried under their inspection.[10] Two trials were accordingly made which were considered satisfactory, and thenceforth the adoption of the propeller for the naval service was deemed not improbable.

Before finally deciding, however, upon the adoption of the propeller, the Lords of the Admiralty considered it desirable that an experiment should be made with a vessel of at least two hundred tons, and Mr. Smith and the gentlemen associated with him in the enterprise accordingly resolved to construct the "Archimedes."

1839.—THE "ARCHIMEDES."—This vessel, of two hundred and thirty-seven tons burden, was designed by Mr. Pascoe, laid down in the spring of 1838, and launched on the 18th of October following, and made her first trip in 1839. She was fitted up with a screw of one convolution, which was set in the dead-wood, and was propelled by two engines of the collective power of ninety horses. Her cost was ten thousand five hundred pounds. She was built under the persuasion that her performance would be considered satisfactory if a speed was attained of four or five knots an hour, and that in such an event

[10] This was a year or more after their trip in Ericsson's "F. B. Ogden."

the invention would be immediately adopted for the service of the navy. Nearly twice that speed was actually obtained.

After various trials on the Thames and at Sheerness, the "Archimedes," on the 15th of May, 1839, proceeded to sea. She made the trip from Gravesend to Portsmouth, under adverse circumstances of wind and water, in twenty hours. At Portsmouth she was tried against the "Vulcan," one of the swiftest steam-vessels in her Majesty's service. The trial took place before Admiral Fleming, Captain Crispin, and other competent authorities, who acquired from the result a high opinion of the efficiency of the screw as a propeller, which they expressed in writing to Mr. Smith.

The following description of the "Archimedes" is from a newspaper of the time:[11]

"The 'Archimedes' is rigged as a three-masted schooner, with her masts raking. Her length is one hundred and twenty-five feet; average draught of water, ten feet; capacity, two hundred and forty tons; power of engines, eighty horses.

"The mode of propulsion may be said to be by a portion only of the Archimedean screw. When the vessel was first tried, a full turn of that species of screw was employed. The inventor afterwards, for the sake of compactness, introduced the double-threaded screw, with half a turn of each thread, as more applicable to this vessel, although he prefers the other. This is of iron, and is fixed in an opening on the run of the vessel, above the keel, and about ten feet forward from the rudder. The screw works transversely with the keel, radiating the water all round as it turns with a backward movement. Its diameter is five feet nine inches, and the length fore and aft about five feet. It almost appears incredible that so small a portion of machinery could propel a vessel of such length, but the hold it takes of the water, and the velocity with which it turns, are the elements of its power. It is quite under the surface, and is therefore invisible to spectators, either on board or on shore. It is worked by a spindle forming its axle, which runs fore and aft and is connected with the steam-engine, the velocity being acquired by a combination of spur-wheels and pinions. Each revolution of the larger wheel turned by the cranks of the engines gives, by the multiplied power, five and one-third revolutions of the screw, which consequently revolves at the rate of from one hundred and thirty to one hundred and fifty turns in a minute, according to the speed of the engine. In consequence of the powerful stream thus propelled against the rudder, the ship is actually found to obey the helm much more readily and to be therefore more under command in steering than either a common steam- or sailing-vessel, so that she can easily turn round in one and a quarter or one and a half of her own length, while it is well known that an ordinary steamer

[11] The Inverness *Courier*.

cannot do so with the paddles in less than six times her length.[12] The shafts of the steam-engine work fore and aft, the cranks turning transversely, so as to communicate the power directly, by cog-wheels, to the screw; and there is one considerable advantage arising from this arrangement of the machinery,—namely, that the cylinders, and in fact the whole weight of the engine, rests immediately over the keel, where the vessel is the least liable to straining or twisting from the effects of undue pressure. The larger wheel is toothed or cogged with hornbeam (timber).

"The action of the screw is different from the operation of 'sculling,' in the particular that in sculling there are but two motions, the chief force being derived from the lateral; whereas the screw exerts an equal degree of power for every part of its surface towards the periphery in the direction of the radii. The successive columns of water, as fast as presented, are forced away by the act of rotation, pretty much as the earth is turned away from the mold-board of a plow. The action of the screw may be said to bear the same relation to 'sculling' which the use of paddle-wheels does to the ordinary mode of propulsion by oars.

"The 'Archimedes' has made several trips and works well. Her speed is not quite so great as that of a first-rate steamboat in calm weather, but this is believed to result from the fact that her engines are on a new principle, and made by an inexperienced engineer. The full power of the boat is eighty horse-power, but in reality they do not work up to more than sixty.

"One of the greatest advantages of this invention, as applicable to all descriptions of shipping, is the circumstance that the screw may be thrown out of gear in two minutes and the vessel be put under sail alone. The screw is then turned by the motion of the vessel, but the drag is not more than half a mile in ten. Even the drag itself admits of being removed, as provision is made for totally unshipping the screw and bringing it upon deck.

"The advantages of the screw over the paddle-wheels in ocean-steamers, it will be readily seen, must be very great. The leaning over of the ship often throws one of the paddle-wheels out of water and immerses the other too deeply. The screw is always in the water. The saving of fuel will be considerable, as the fires may be extinguished on board a ship propelled by the screw and the vessel used as a sailing-ship when the wind is full and fair. As a vessel of war the advantages would be palpable. This opinion has been expressed by officers of the royal navy who have witnessed the performance of the 'Archimedes.' When it is recollected that this invention is yet in its infancy, and that the 'Archimedes' is the first vessel on a large scale

[12] This was a confounding answer to Sir William Symond's opinion of Ericsson's boat,—"It would be absolutely impossible to make the vessel steer."

that has been constructed on the new principle, we may readily infer that the introduction of the screw in the construction of steamers is destined to work an important change in one of the most essential features of naval architecture."

Soon after this the "Archimedes" had to return to London, an accident having occurred to her boilers, and new boilers were fitted, which occupied five months. She was then sent to the Texel, by request of the Dutch government, whose interest her performances had excited; but on the way she broke the crank-shaft of one of her engines. She was consequently put into the hands of Messrs. Miller, Ravenhill & Co. for a complete repair, and at the same time the form of her screw was altered by dividing the one whole turn into two half-turns, which, being placed on the opposite sides of the axis, gave to the propeller the character of a double-threaded screw of half a turn. In April, 1840, the Admiralty dispatched Captain Chappell, of the royal navy, and Mr. Lloyd, chief engineer of the Woolwich Dock-Yard, to conduct a series of experiments upon the vessel at Dover. These experiments were carried on during April and May, and the speed of the "Archimedes" was tested relatively with that of the mail-packets on the Dover station. The result was a highly favorable report to the Admiralty, stating that the success of this new method of propulsion had been completely proved. Immediately after these experiments the vessel was placed at the disposal of Captain Chappell, who, accompanied by Mr. Smith, performed in her the circumnavigation of Great Britain, visiting every seaport of importance. Everywhere the vessel became an object of wonder and admiration. Heretofore engineers had been almost unanimous in opinion that a screw would occasion a loss of power from the obliquity of its action, and the consequent dispersion of the water, and concluded, therefore, that it would be ineligible as a propeller. But it was impossible for them to resist facts such as the performance of the "Archimedes" afforded.

The London *Nautical Magazine* at this time took decided ground against the screw as a means of propulsion in the following article:

"PADDLE-WHEEL *versus* SCREW. *Trial of Strength.*—A few days ago the following experiment was made in the river to test the power of the Archimedean screw, as compared with the common paddle-wheel, in presence of Mr. Fawcet, the eminent steam-engine builder of Liverpool, Mr. Barnes, and other gentlemen. The 'Archimedes,' with Mr. Smith's screw-propeller, and the 'William Gunston' tug-boat, with common paddles, were lashed together, stern to stern, with an interval between them of from twenty to thirty feet. The former vessel has two engines of twenty-five horse-power each; the latter, two of twenty.

"The 'Archimedes' was employed to tow the 'William Gunston'

with her engines and paddle-wheels in a state of rest, and this she did with ease, the object of this preliminary trial being to ascertain that the working efficiency of the screw was not impaired by the relative position of the two vessels. The steam was then let on to the engines of the 'William Gunston,' and a fair trial of strength commenced between them. In a little while the 'Archimedes' was seen to have lost all power over her rival; a minute or two more and the 'William Gunston' was tugging the 'Archimedes' after her in spite of the superior engine-power employed on the opposite direction, and in spite also of her much-lauded screw-propeller,—at first slowly, and as it were intermittingly, but at a constantly increased rate of speed, till at last it reached the usual tug-boat speed of from eight to nine knots per hour.

"So complete and convincing an experiment, as recorded in the above extract from the *Mechanic's Magazine*,[13] must indeed have been a most interesting sight, the result of which has fully confirmed our opinion of Mr. Smith's invention, as being one of those that are *theoretically most ingenious, but in practice deficient.* In the midst of the laudatory accounts of the doings of the 'Archimedes,' which followed her all round the coast, we briefly recorded our opinion among our 'Shakings,' and that too in spite of her beating an old government steamer at Liverpool. 'We ask then, 'Where is the power of the "Archimedes" to contend with the ocean waves?' And 'echo answers, Where?' Let her keep to still water, and Mr. Smith's propeller will prove as good in practice as it has in theory. We understand it is being adopted on canals."[14]

After the "Archimedes" had accomplished the circumnavigation of Great Britain, she made a voyage to Oporto. This voyage was performed in sixty-eight and a half hours, and was at the time held to be the quickest on record. She also visited Antwerp and Amsterdam, passed through the North Holland Canal, and made a great number of trips to other places, leaving everywhere the impression that she had succeeded in demonstrating the practicability of propelling vessels by a screw in an efficient manner. She was next loaned to Mr. Brunel, who fitted her with screws of several different forms, and performed various experiments with her at Bristol. The result of his experiments was so satisfactory that the "Great Britain," orginally intended to be propelled by paddles, was altered and adapted for the reception of a screw.

Meanwhile, the Admiralty determined upon adopting the screw for the navy, and in the merchant service an opinion had arisen equally favorable to its eligibility.

In 1840 and 1841 the "Princess Royal" was built at New Castle,

[13] Vol. xxxii. p. 149, No. 885, for July.

[14] London *Nautical Magazine*, September, 1840.

the "Margaret" and "Senator" were built at Hull, and the "Great Northern," a vessel of fifteen hundred tons burden, was laid down at Londonderry, in Ireland.[15] These were merchant screw-vessels. In 1841 the "Rattler," the first screw-vessel built for the British navy, was laid down at Sheerness as a paddle-wheel steamer, but while on the stocks was changed to a screw-steamer. This vessel, of eight hundred and eighty-eight tons burden, was launched in the spring of 1843. The "Rattler" was fitted with a screw in every respect the counterpart of the screw of the "Archimedes,"—viz., a double-threaded screw of half a convolution. The length of the screw was subsequently reduced, and it was found that best results were obtained with a length of screw answering to one-sixth of a convolution. In the years 1843, 1844, and 1845 an extensive series of experiments were made on the "Rattler" upon screws of various forms, and under varying circumstances of wind and water. The performance of the vessel was so satisfactory that the Lords of the Admiralty ordered twenty vessels to be fitted with the screw, under Mr. Smith's superintendence. The screws introduced into these vessels in every case were double-threaded screws, set in the deadwood, after the fashion adopted in the "Archimedes" and the "Rattler."

Such are the respective merits of Smith and Ericsson in connection with the practical introduction of the screw-propeller. Ericsson had the advantage in mechanical capacity, and Smith in persistency of character. Ericsson, previous to his connection with the screw, was an accomplished engineer. Smith was only an amateur, with everything except the leading idea to learn. Ericsson's mechanical resources gave him means of overcoming difficulties which Smith did not possess; and Smith had to accept expedients then usual among engineers as his starting-point, while Ericsson could reject those expedients in favor of others which his own ingenuity suggested. In bringing up the speed of his screw, Smith had to use gearing, as that was the expedient which was approved by orthodox engineers; but Ericsson, throwing the dogmas of the engineers to the winds, coupled the engine immediately to the propeller. This comparative destitution of mechanical resources must have added to the difficulties of Smith. Smith's patent was taken out on May 31, 1836; Ericsson's patent was taken out on the 13th of July, 1836. The first trial of Smith's experimental boat was the 31st of May, 1836, and the first trial of Ericsson's experimental boat was on the 30th of April, 1837. In the summer of 1837, Ericsson exhibited his vessel to the Lords of the Admiralty, but without result, owing, as is alleged, to the anticipated difficulty of steering. In September, 1837, Smith carried his vessel to sea, and showed, by repeated experiments, that the objection entertained to Ericsson's plan did not exist in his. Ericsson's vessel ap-

[15] A description of these vessels will be found in the next chapter.

pears to have been more efficient than Smith's. Its engine-power was greater, and the mechanical details of its construction more perfect. But Smith's vessel was also completely successful. She towed the "British Queen" steamer in the river, and also the "Lord William Bentinck," a heavily-laden ship, at a speed of two and a half miles an hour, although there was an opposing breeze. Both vessels were therefore successful.

1837.—STEAMERS ON THE DANUBE.—On the 18th of February, 1837, six steamers launched by the Austrian government commenced running between Pesth and the ports of Lower Hungary. This step was hailed in Germany as an important inception of the entire navigation of the Danube by the Austrian government.

Of the steam-packets which were to run between Marseilles and Constantinople, and between Marseilles and Alexandria, seven vessels were this year assembled at Toulon. The "Scamandre" was the first vessel to start for Constantinople. She left during the month of April. A Russian steamer left Constantinople for Odessa on the 20th of each month; fare, twenty-two dollars. An English steamer was running from Constantinople to Trebizond at the beginning and middle of each month, the distance being five hundred and thirty miles. An Austrian steamer, however, placed on that station in May, 1837, made the passage once a week.

The steamer "Maria Dorothea" left Constantinople for Smyrna every Monday, and made the voyage in thirty-six hours. An English steamer, the "Crescent," made the same passage in thirty hours. The Levant steamer, which had hitherto run between Smyrna and Athens twice a week, made the voyage in about forty-eight hours. The Ionian steamers left Corfu for Zante twice a month, the voyage being made in about fourteen hours. The English steamer left Corfu the 29th of each month, touched at Patras to take the mail, and thence proceeded to Malta, touching at Zante, and on to Falmouth, making the voyage of nineteen hundred miles in about twenty days.

Upper cabins in steamers on the great American lakes were first introduced in 1837, on board the steamer "Great Western," by Captain Augustus Walker, who died at Buffalo, New York, 1865, aged sixty-five years.

GEORGE H. PREBLE,
Rear-Admiral U.S.N.

(To be continued.)

AMONG OUR CONTEMPORARIES.

To moderate any transports in which the average spread-eagle orator might indulge, we should recommend reading of the short article by Captain Aspinwall in the January number of the *Journal of the United States Artillery*. He says, "The five regiments composing the artillery force of the United States consist of two hundred and eighty officers and three thousand six hundred and seventy-five men, of which ten batteries are drilled, instructed, and equipped as light batteries, leaving but two hundred and forty officers and about three thousand men for garrison duty; or, taking the number of guns at present available, and with the twelve hundred and ninety-nine new guns recommended by the fortification board, an average of less than one man per gun. Even should Congress authorize the organization of the two new regiments of artillery, the average would still be less than one and one-half men per gun.

"In active service we may estimate the number of men required to man each gun at forty, so that an aggregate of from ninety thousand to one hundred and twenty thousand *artillerymen* would be necessary in the event of war; how far the present force of three thousand would leaven this mass is a question worthy of consideration, and may afford the basis of some interesting mathematical calculations. I believe that a heavy artillery militia force under control of the Federal government, supervised and to some extent commanded by officers of the regular service, could be readily organized at comparatively small expense, and which would become practically efficient and thoroughly effective. Such organizations in all the seaboard cities would undoubtedly prove attractive to young men; the duty required could be easily arranged so that it would occupy less time of the individual and be less burdensome than in the national guard of the States." . . .

"Comparisons are odious, but I cannot refrain from calling attention to England, the only country whose military establishment is in any way akin to ours.

"With a population of thirty-eight million (Great Britain and Ireland), little more than half of ours, there are in the auxiliary forces alone, of garrison artillery, some thirty-three militia battalions and sixty-two battalions of volunteers, exclusive of the Channel Islands,

Malta, India, and the colonies. I regret I have not before me the aggregate of the number of men in this force.

"Compared with the above, the United States has not to my knowledge a single battalion of heavy artillery militia or national guard.

"Is it not time that some interest was aroused in the subject? We have been fortunate in nearly thirty years' peace and prosperity, but, though some people affect to believe that there will be no more war, who can tell when some question may arise which can be determined in no other way?

"Admitting for the sake of argument that war with a foreign power is improbable, should we not feel more secure, and especially now that the government is improving and re-arming the forts, in the knowledge that there was an auxiliary force drilled and trained in the use of the armament?

"May the question never arise when the services of such a force shall be required for actual combat; the best way to prevent such a necessity is to be prepared."

A short time ago we had occasion to refer to a statement made by an officer of experience to the effect that many of the Indians who had been promising pupils in the schools at the East fell back into barbarism when they returned to the reservations and came under the influence of their relatives, while they had no employment at the trades which had been taught them to enable them to keep out of mischief.

There are two sides to most subjects, and *audi alteram partem* is a good motto for any one who wishes to get at the truth. Either the plan of educating Indian youth is a great mistake, or it has had some degree of success,—which all right-minded people must wish for. The letter of the correspondent to which we have referred has provoked a reply to the editor of the Philadelphia *Ledger*, in which the first letter appeared denying the statements in that letter. The writer of the denial, Henry Standing Bear (Carlisle, '81), who writes from Pine Ridge Agency, South Dakota, says that, "so far as he knows," no graduate of these Eastern schools has gone back to Indian life at the Rose Bud, Cheyenne, or Pine Ridge Agencies. "There are only four graduates from these schools who have returned to this agency now. Two are now working at their trades and two are clerking in stores. There are several other returned students (not graduates) who are teaching in day-schools, and several interpreters for district farmers on reservations. Some are raising stock and cultivating land, erecting fences and barns and good houses for themselves, and are doing well on their farms, depending upon their own knowledge of agriculture and mechanics which they had acquired in Eastern schools. I have met nearly every returned student of this agency, all in citizen's clothes, and

all doing honorable labor. It is unjust and cruel that the fall of one or two returned students in the past, who have been in school one year or a few months, were returned to reservation on account of sickness, and have returned to Indian life again, should be put upon the shoulders of earnest, faithful superintendents and graduates of these Eastern schools."

So there it is!—a positive statement on one side, and an equally positive one on the other, and both made by persons who should know the circumstances.

It would be well if we could have some authoritative announcement as to the doings of these "wards of the nation," in regard to whom a great responsibility rests somewhere.

Last spring the English government brought over a detachment of Royal Engineers and Royal Marine Artillery destined to take part in the extensive fortifications which are now in progress at Esquimalt, under the supervision of Major Muirhead, of the Royal Engineers. This officer has been there for a year past, and there is every reason to suppose that the plan of these works has been under consideration for a much longer period, and that they are intended to be extensive, complete, and formidable. A correspondent who appears to be well informed writes: "'Fortifications' is a term calculated to mislead the average man, for those who come to Esquimalt to see the 'forts,' and look for towering structures of massive masonry, pierced by many loopholes, out of which the terrible array of ordnance will frown upon the shipping in the straits, will be sadly disappointed. Modern 'forts' are built with no idea of show, and there will probably be no exhibition to the public of the results of all the time and money to be expended in this work of defense until 'grim-visaged' war calls for a terribly earnest application of the power which it will have taxed the ingenuity of military science to store up for the momentous occasion. Esquimalt (pronounced Esq-why-malt) and Victoria harbors, as a glance at the map will show, are situated at the extreme southeast corner of Vancouver's Island, and are divided by a small rocky peninsula. This it is that will be the heart of the citadel, for its natural situation favors the plan to be adopted of making it practically impregnable to attack from the sea and likewise from the land, which, after a short level stretch, gradually slopes up into the rugged Sooke hills and other coast ranges of Vancouver's Island. The fortifications are projected to extend from Point Macaulay all the way to the head of Esquimalt harbor, literally controlling the navy-yard, imperial dry-dock, magazines, and numerous store-houses."

The correspondent then goes on to describe, in a general way, of course, the "gun-pits," or "wells," with the electric means of simul-

taneously firing the guns, and all the modern methods of securing the maximum of effect for the minimum of exposure of ordnance and men.

There are also to be built a chain of landward forts, with parapets, the exact position of which the correspondent does not profess to know.

"Though it is the intention to maintain permanently an imperial force of engineers and marine artillery at Esquimalt, these will be but the nucleus of the little army required to man the guns in case of trouble, and it is part of the understanding between the two governments that Canada shall supply her full quota of men, as she has of money. With this in view the Victoria Battalion of Garrison Artillery has been raised to a strength of nearly six hundred men, and that the old and new members alike may have every opportunity to acquire the knowledge necessary to artillery warfare, a splendidly-equipped drill-hall has been provided, and one of the best instructors of the unsurpassed artillery schools of Eastern Canada has been attached to the battalion for service so long as he may be required."

It would appear that the pursuit of game in India is attended by other dangers than sun-stroke or a sudden encounter with a tiger. Recently Surgeon-Captain Pearse, of the British army, was shooting with a party of officers when he became temporarily separated from the rest, and was attacked by the natives,—a mob pursuing him with ropes, sticks, and even sickles, by which another of the party was afterwards wounded in the arm. Surgeon-Captain Pearse was at last forced to fire in self-defense, after trying his best to get away, and the result was the killing of a native. The native Indian press trumpeted forth a great deal about the brutal murder committed, and the officer was tried for it, but acquitted by the High Court of Calcutta. The *United Service Gazette* says that the circumstances of the case have been paralleled not unseldom in India. If a native gets killed or wounded in such a *mêlée*, a host of witnesses come forward to misrepresent the circumstances and accuse the white man of deliberate and unprovoked murder. Such occurrences show how deep-rooted must be the hatred of the natives for their rulers, and such collisions must inevitably increase suspicion and dislike on both sides.

The foregoing vividly recalls to the writer a scene in which he was a participant in China long ago. He, with a friend (who died a commander some years since), was after snipe in the paddy-fields near Whampoa, when we found ourselves suddenly surrounded by an infuriated crowd of natives, armed with long bamboos and brick-bats. It was the fact that some of the latter came whistling by our ears which

first drew our attention,—so much were we occupied with the birds, and so silent had been the approach of our assailants.

Fortunately, there was a dyke leading straight to the place in the creek where we had left our boat, and by making good time down that, and occasionally facing around and presenting arms, we reached there. But we still had a long pull down the narrow creek, with a high dyke on one side, under cover of which the Chinamen threw all sorts of missiles, some of which struck the boat. Our men wanted to land and "clean 'em out," but that would not do, for we were in a place we had no right to be in under the existing treaties, and were glad to get back to the ship, taking care to say nothing about our adventure.

There is not much doubt that had we not had arms it would have gone very badly with us. That same year, just outside Canton, a young American traveler who was looking about was so cut and beaten by a mob of these people that he was in bed under treatment for weeks. Our case, and that last mentioned, differed from that of the English officers in the fact that we were where we had no right to be. They, no doubt, were within their rights.

Last March the École Polytechnique celebrated its centenary in Paris under the auspices of François Sadi Carnot, president of the republic, and an old cadet of the school. The *United Service Gazette*, in speaking of this event, says, "The *Proceedings* of the Royal Artillery Institution for April publishes a brief sketch of the celebrated French school, compiled by Captain Oliver, late R. A. To the English cadet this chronicle is, indeed, strange reading, the strong political bias of the École, and the active part taken by its students in stirring scenes of revolution and civil discord, seeming strongly at variance with the legitimate calling of the members of a military institution of this nature. The cadets during the war of 1870–71 were, however, quite correctly engaged in 'taking their full share of duty on the ramparts and at the outposts.' It is strange, however, to read that subsequently 'the school, as a whole, with only two dissentients, declared for the government of Versailles.' In 1874 the school acquired its present uniform. In 1875 Gambetta, on the occasion of a visit, alluded to the zeal of the cadets in 1871 in the organization of camps and the manufacture of arms and ammunition. He pronounced these words: 'Without the École Polytechnique the work of the national defense would have been impossible.'"

A correspondent of one of the principal newspapers, writing recently from Shanghai, gives some interesting details concerning the arsenal and gun-factory belonging to the Chinese government. The

writer premises that he is familiar with our gun-works at Washington, and then says, "One hundred acres of factories for the making of arms and munitions of war! Vast foundries for the smelting and rolling of steel! Gun-works turning out cannon as big as the biggest now being made at the Washington Navy-Yard! Shops covering acres devoted to the making of the latest of modern magazine-rifles!" He then goes on to tell us that any one who thinks that China is asleep to what is going on in the modern world has only to visit one of its great government gun-factories to be convinced of his mistake. "I have spent some time at the gun-works of the Washington Navy-Yard, where are being built the guns for our largest war-ships. We pride ourselves upon them as a nation and consider them among the finest gun-works in the world. Away out here in China there are similar foundries doing even more wonderful work, and that to a large extent with native-made machinery, and just now with Chinese iron and Chinese coal." They were making, in addition to 12-inch guns, the latest improved patterns of Armstrong rapid-fire pieces. A $4\frac{7}{10}$-inch gun of this kind was shown, and worked most easily and completely. "China has no scruples as to patents, and she gets now all of the latest improvements in war machinery and copies them here." One ordinary-looking Chinaman was making the finest of the improved sights,—the work as delicate and beautiful as that of a watch-maker,—and there was an improvement on the original which this man had made. The rifling-machine for the big guns would have cost fifteen thousand dollars to import, but the Chinese mechanics were shown the drawings and made it for half that sum. With the development of the mineral resources of the vast country,—coal and iron existing in almost every province, and of excellent quality,—there seems nothing to prevent the arsenal from keeping abreast of the latest improvements in offensive weapons; while they are putting in the plant for forging steel plates and ingots which will render them independent of the rest of the world in that respect also.

The perfectly desultory warfare carried on in Brazil for such a time (which has been likened by one writer to a French duel on a large scale), has drawn the attention of many people to the fact that one of the dangers there in summer—March, April, and May especially—is the yellow fever. Up to about 1850, Rio Janeiro, Bahia, Santos, and other beautiful and convenient parts on that coast, were also noted for remarkably healthy conditions, considering their situation. In Rio especially people used to take all sorts of liberties with themselves, day or night, and an indisposition was only said to be due to "camerone omelets" at Pharonx's,—then the great restaurant of the place.

In March, 1850, the writer made his first visit to Rio Janeiro. He

was destined to spend very many months there some years afterwards, but to him it was a fairy scene at that time, which afterwards palled upon the sense as the human surroundings became more prominent. The sloop of war to which he was attached, bound to China, entered the harbor at night, and anchored in the usual place for naval vessels. Next morning at daylight orders were given to "out launch and first cutter" and prepare to recruit from the stores,—which were then kept on Euchados Island, with a master in the navy as storekeeper. The boats were hardly in the water when the day revealed the flag-ship and another of the vessels of the station, with two store-ships, lying away over at Nictheroy. There seemed also to be very little movement in the usually busy harbor, for it was at that time that the outward-bound vessels usually took advantage of the short-lived land wind. When a man-of-war went to sea the compliment was paid of sending one or two boats from every man-of-war in the harbor to tail on to her tow-line and give her a good start down to Villegaignon. American men-of-war often gave their own merchant vessels a start in this way.

In fact, there was always movement at that time in the morning, but none appeared there. Instead of signaling, the commodore lowered a boat, and in a little while the cutter was under our stern hailing us. "I am forbidden to board you, sir. The yellow fever is very bad. Commodore Storer's orders are that you hoist in your boats at once, and hold no communication with the city. Get under way with the sea-breeze and stand over and anchor near the squadron." Then was found the real condition of things, which was dreadful indeed. People were dying of the fever by the hundreds on shore, while many vessels in the bay were without crews, so great had been the mortality. Bells were tolling all day long and funeral processions filled the streets, but the government soon wisely stopped all demonstrations of the kind, and had interments made at night and privately. Among the shipping a little paddle-wheeled steamer made a round once or twice a day to remove the sick and dead.

The line-of-battle-ship "Ohio" had sailed from Rio but a few days before our arrival on her return from the Pacific, and having contracted the fever while obtaining supplies at Rio, lost a number of valuable officers and men before she had been out many days. The store-ship "Lexington" also was unfortunate; but the writer's ship escaped almost without mishap, only one case occurring on board, and that was in the person of a young officer who had visited Rio from the other side against orders. He recovered and is still living, though not in the service.

It was with great anxiety that we received stores and water necessary for the long passage before us, and owing to the state of affairs it took us ten days to do what might ordinarily have been easily done in two or three.

It has generally been said that the yellow fever was first brought to Brazil by vessels going to California in 1849–50, which had previously put into some of the West India islands for water and refreshments, but the prevailing impression there at that time and long afterwards was that it had been introduced by a slaver which had made a voyage from Bissao to somewhere near Cape Frio. It is possible that the fever may have come from both sources; at any rate, it has been there ever since, and occasionally has extended to the River of Platte, and even to the west coast.

Afterwards, when on the Brazil station in the flag-ship "Congress," we had the fever on board in consequence of giving liberty at Bahia. One or two deaths occurred and there were several cases, but we went to sea at once, ran out into the trade wind, hove to, opened the gun-deck ports, got up the studding-sails for wind-sails down the fore and main hatches, and dried up the berth-deck with drying-stoves. The effect of which was to put a stop to the fever.

Colonel Le Mesurier, of the Royal Engineers, in an address delivered before the Military Society of Ireland, said that before the Civil War in England there were four different kinds of mounted soldiers. Three were of cavalry,—the Cuirassiers, the Arquebusiers, and the Carabiniers. The other mounted troop was called Dragoons. The cavalry were armed with defensive armor from head to foot. Their offensive armor consisted of a sword and two pistols. Their horses were obliged to be at least fifteen hands high to carry the weight of the man and the armor. The Arquebusiers had defensive armor, but not to the same extent. They had an open casque and breast-plate. They also had a sword and pistol, and an arquebuse, which was thirty inches long and carried a bullet seventeen to the pound. The Carabiniers were armed in the same way as the Arquebusiers, except in regard to their fire-arm, which was a carbine twenty-seven inches long. Then came the Dragoons, who were merely infantry mounted. It was necessary that their horses should be swift, for, though they fought as infantry, they always worked with cavalry. They were armed as ordinary foot musketeers, part of them having muskets and part of them pikes. When Cromwell was appointed Lieutenant-General of Horse, and second in command under Fairfax, he remodeled the whole of the Horse, and brought it to such a degree of proficiency as to be considered the best in Europe, while Colonel Le Mesurier contended that Cromwell "was certainly the greatest cavalry officer of his time, and perhaps of all time. He knew well the power of his army, but he also knew the limit of that power. One thing he did was to rid the army of politicians;" which remark forcibly reminds us of another Civil War, not quite so remote, which did not

progress very satisfactorily until the political generals were consigned to "innocuous desuetude."

"A practical joke at the expense of a whole regiment is rather a dangerous pastime to indulge in," says the *United Service Gazette*, "as a peasant coming from the neighborhood of Arras (France) has just learned to his discomfiture. The corps was marching through a village in that part of the country when suddenly the command to halt was heard, and was naturally repeated by the officers of the different companies. Great, however, was the surprise of the colonel when he found that the gallant Thirty-third had been brought to a stand-still. He had not given the command in question, and a stern investigation soon led to the detection of the culprit, who had been watching the effects of his jest from the door-way of a public-house at which he was lounging. The fellow was at once seized, and, guarded by four soldiers with fixed bayonets, was promptly on the road to Arras, whither the regiment was returning. Ere the town was reached, however, the colonel released his prisoner, who was now in a very penitent mood, but not before giving him a severe reprimand." It would be worth while knowing whether any French statute was infringed by this jocular vagabond, or whether in reality the colonel had any right to capture a citizen who was merely shouting out a word?

The appointment by Queen Victoria of the German emperor as honorary colonel of the Royal Dragoons is said to be the first time in the history of the British army where a foreign sovereign has been admitted to its army list.

Honorary colonelships are so freely bestowed by crowned heads on the Continent that it is a wonder that the queen has never fallen in with the fashion before.

Most German regiments have foreign "chiefs,"—Austrian, Russian, Saxon, Bavarian, or what not. The Prince of Wales is colonel of the Blucher Hussars, the Duke of Connaught of the Zeithen Hussars,—both most distinguished regiments,—and the list might be prolonged.

The *Pall Mall Gazette* says, "The uniform of the 'Royals,' with its scarlet tunic and plumed helmet, will suit the Kaiser to a T, and we may be sure that in all the museum of his multitudinous uniforms none will please him so much as that of the regiment which, with the Scots Grays and the Inniskillings, formed a glorious 'Union Brigade' at Waterloo."

It occurs to us that the Kaiser, who is a martial-looking man, would look better in his red tunic than the Prince of Wales would in that of the Zeithen Hussars. Uncle and nephew may chance to wear them side by side.

A bill was recently introduced into the British Parliament having for its object the prevention of unauthorized wearing of naval and military uniforms by sandwich-men and other such persons. The fifth clause says, "Any person not serving in Her Majesty's naval or military forces who shall willfully and without Her Majesty's permission wear the uniform, or any part thereof, of Her Majesty's naval or military forces, shall for every such offense be liable to a fine not exceeding ten pounds."

From the operation of the act is exempted any one who uses such uniform in a "stage play performed in a place duly licensed for the performance of stage plays."

We in this country have no reason to think well of Admiral Sir George Cockburn after the wanton destruction of the Capitol at Washington, effected by himself and General Ross. His ears must have burned many times when his character and conduct were the subject of comment from Americans, but it appears that some of his own countrymen have a just appreciation of the man, if we may judge from a book-notice that lately appeared in the *Army and Navy Gazette*. As will be remembered, Sir George took Napoleon to St. Helena in the "Northumberland," and appears to have treated his involuntary guest with scant ceremony at times. But it was only within the last few years that the public knew that the admiral had kept a private journal of the events of the voyage, which some of his descendants have had the bad taste to publish, as if to remind the world what a brute their *forbear* had been, while it appears from the showing of the "Diary" itself that Napoleon behaved with great tact and dignity during the numerous annoying scenes created by Sir George. The *Army and Navy Gazette* quotes several instances of this, one of which we quote: "On crossing the line the emperor sent M. de Bertrand to say that he would like to give one hundred or two hundred napoleons to the crew as a bonus for exemption from the ceremonies. The admiral was not to be done. 'As I considered this,' he says, 'to be an attempt of the general's to avail himself, with his usual finesse, of a plausible excuse to distribute such a large sum among the seamen solely with a view of rendering himself popular with them, I, of course, not only refused my assent to this request, but pointedly prohibited it.' He would let Napoleon give five napoleons, but Sir George remarks, 'He did not send them.' The 'Corsican ogre' and his ways were evil in his eyes, and when he parted with 'this man,' as he calls him, at St. Helena, he ceased to take any thought about the 'General,' of whose frankness, fortitude, and amiability he has, however unwillingly, left an interesting record. It would be interesting to learn," the *Gazette* goes on,

"what Napoleon thought of the admiral, if he thought about him at all, except as a pompous jack-in-office."

Once upon a time it was our fortune to sail under an old commander in the navy who was an original character in many respects. One of his notions was to sign himself "Commander" before his name instead of after it,—the signature to many of his official letters containing more words than the text,—thus:

I have the honor to be,
very respectfully,
your obedient servant,
Commander SAMUEL HALL BOWLINE,
U. S. Navy,
Commanding U. S. Ship "Burton."

Many times did the clerk transfer the commander to its proper place, and cut off the "I have the honor to be," but without effect,, only entailing upon himself the trouble of rewriting the letter.

Nor did people hesitate to affirm that they had seen letters addressed to "Mrs. Commander S. Hall Bowline," but this was, of course, an entirely private matter, and beside the subject of official signatures.

We had not thought of Commander Hall Bowline for years, until an article in the *Journal of the Military Service Institution* brought him to mind, the article being one on "Post Records," by Lieutenant Hine, of the Sixth Infantry, who makes a strong appeal for the simplification of official correspondence. He says, "Life is too short to put trivial matters in writing, and an office that is overburdened with useless written work cannot cope successfully with emergencies. . . . By the omission of 'your obedient servant' from the letters and the book six words were saved in the writing of every letter. For some time past all letters coming from the adjutant-general's office have contained only the 'very respectfully' in the ending. The adjutant-general's is necessarily the most military of the staff departments, and in such matters as correspondence fixes the standard for the rest of the army. The letters that it sends out every day are its real models, any variance from so-called models heretofore distributed to the contrary notwithstanding. Acting in nine different capacities, the writer has mailed several hundred letters without 'your obedient servant,' and no exception has been taken thereto. The time may come when 'very respectfully' also will be omitted,-and letters signed like indorsements."

A very interesting paper was published, some time ago, in the *Contemporary Review* upon "Marshal MacMahon and his Forbears."

After bringing the family history down to the marshal's time, the article goes on: "All the three MacMahon brothers of the second generation, born at Sully, were loyal, in the old romantic Jacobite sense, to the Bourbons. They were officers, the two elder in Hussar regiments, and Maurice Patrick in a line regiment in active service in Algeria, when the Revolution of 1830 broke out, and Louis Philippe picked up the crown which fell from the head of his cousin and benefactor. Each of the three young officers at once asked the general over him to forward his resignation to the Minister of War. Maurice's was not accepted, for his general thought him too valuable an officer in war-time to let him retire from the army without giving him time to reflect on the course he proposed taking. Some days after his resignation had, as he thought, been sent on, he received a letter from his father, the old marquis, conjuring him not to throw up his commission, but to keep out of political partisanship by making the rule of military obedience the law of his life. He himself had known what it was to be torn up by the roots and cast abroad to serve in an army which, though forward to fight for the lawful sovereign, had to march against the nation that he claimed the right to rule. Once in the thick of a campaign it was a clear duty not to leave; indeed, to leave would be to desert. The king (Charles X.) had not asked him for any such sacrifice as the two other brothers had made.

"Maurice Patrick MacMahon went to his general to ask if the letter of resignation would have reached Paris. 'No, for it was never forwarded. It is in a pigeon-hole there. I can't spare you. Take it and burn it.'

"If that letter had not been detained the French army, in all probability, would have been taken prisoners at Magenta, and the chapter of European events, and of great changes in political geography, which began in 1859, would never have been commenced. An Italian Sedan must have secured to Austria the upper hand across the Rhine and in Italy, nipped in the bud the military movement in the latter country, led to a great overturning and upheaval in Paris, and, in short, have given a trend to European events quite different from the one they have been taking since MacMahon rode into Milan, his horse knee-deep in the flowers that were cast at him from the windows, and with a child he saved from being run over on the bow of his saddle."

E. SHIPPEN.

SERVICE SALAD.

In the River Pei-Ho.

(From Blackwood's Magazine.)

A NAVAL PENSIONER'S STORY.

[The episode which is the subject of this ballad is in every detail historical. For certain incidents, which are now made public for the first time, the author desires to acknowledge his obligations to various survivors of this gallant affair, and notably to Admiral Sir George Ommanney Willes, G.C.B. (who was captain of the "Chesapeake"); to Paymaster-in-Chief James William Murray Ashby, C.B. (who was secretary to Rear-Admiral Sir James Hope, and who has lent copies of all the official papers and plans bearing upon the subject); and to Staff-Captain John Phillips (who was second master of the "Plover," and who saw Flag-Officer Tatnall's boat come alongside, and witnessed or heard what happened subsequently). It may be added that no medal was granted for this hard-fought action.]

A YARN about some victory?—Why, bless you, there's no need
For the likes o' me to spin you one: there isn't, sir, indeed.
The folks as writes in the papers, or as brings out regular stories,
Have told you all you want to know about them naval glories.
There's precious little danger of the victories bein' forgot;
But, I'm feared, we do a bit forget the actions as was not.

Yet I count it to their credit, when men have done their best,
Though they have to turn their backs at last and leave undone the rest.
There's many a victory, surely, decisive and complete,
As meant a sight less fightin' than a hardly fought defeat:
And if people do their duty, every man in his degree,
Why, defeat may be more glorious than a victory needs to be.

What do I think of furriners?—Well, they're of many a sort:
You'll find a different lot of them in every furrin port,—
There's Christians and there's cannibals; there's yallers, browns, and blacks;
There's people as is fully dressed with nothin' on their backs:
But the only kind o' furriner it's pleasure to recall
Is the Yankee,—and, I reckon, he ain't furriner at all.

He is? Well, howsomever, sir, he speaks like me and you:
He has a heart inside him: he ain't French, nor Turk, nor Jew.
I say he ain't no furriner; but have your way, not mine,
Though I don't see how he can be when I think of "fifty-nine."
—Ay! there's a yarn as I can spin—forgotten far too soon—
'Bout our defeat in Chiney on the twenty-fifth of June.

It ain't for me to tell you how the troubles there began,
Nor I don't pretend to remember the whole of our Admiral's plan:
'Twas a question of sendin' our Envoy up, by way of the River Pei-ho,
And the Chinese blocked the channel, determined he shouldn't go.
They had thrown three booms across it, and had lined both banks with forts,
Designed by Roosian friends of theirs, accordin' to all reports.

Yet, lor'! we never dreamt as how the Chinese meant to fight:
There's mostwise more of bark, you know, in them there chaps than bite.
Leastways, we thought, if it came to blows, they'd have to pay the bill,
For we didn't see no troops about, and the forts lay wonderful still:
But a Yankee frigate below the bar had heard and seen a bit,
And their adm'ral's cox'en said to me, "You'll find you're chewin' grit."

That self-same adm'ral—Tatnall—flag-officer they called 'im,
Was a rum un, so they all agreed, when things went wrong and galled 'im;
Yet he was an excellent officer—rough, p'raps, but bluff and hearty,
And very particular friends with Adm'ral Hope and the British party,—
Though I did hear tell that, in eighteen twelve, in the old American war,
He fought as a mid agin us, and no one hated us more.

His cox'en, who told me that, explained—and it may be true, I s'pose—
That a family quarrel ain't the same as a row with outside foes:
Young brothers will fall to loggerheads, and fight to their heart's content;
And, in course, it's sad enough to see, but their ain't no lastin' rent:
And, from what I saw in Chiney, I tell you, fair and frank,
I shan't complain if I never have a better friend than a Yank.

Well, the Chinese beggars promised as they'd do as we desired,
And open the way; but they didn't stir, and our Adm'ral he got tired:
And at last says he, "We must force the forts, and burst the booms all three,
And clear the road to Tientsin, that our Envoy may go free."
So he took his gunboats across the bar, and he passed the word of warnin':
"Be ready to-morrow, the twenty-fifth, at half-past four in the mornin'."

The first boom was of iron piles; the second, of heavy spars;
The third, of timber balks, crossed-lashed, and tied with iron bars.
The "Chesapeake's" skipper, Captain Willes, that night, with a boat or two,
Crept up in the dark and nearly cut the second of 'em through;
But the Chinee rascals, bless your heart, were not to be done that way,
And they made the whole thing good again by dawn of the followin' day.

I was then A.B. in the "Plover," which hoisted the blue at the mizen,
When the Adm'ral came with his staff to our little packet from his'n.
The "'Possum" was sent to the first boom, and moored to it close as could be:
There was likewise the "Starling" and "Janus," the "Cormorant," "Kestrel," and "Lee,"
Not forgettin' the "Bant'rer" and "Nimrod," and, lower down, nearly abreast,
The "Haughty" and "Forester," and formin' a kind of reserve to the rest.

The channel was narrow and awk'ard, and the stream ran strong in our faces,
And it wasn't no easy matter to get to our proper places:
The "Starling" stuck in the mud on the left, the "Bant'rer" stuck on the right,
And the others had many a nasty shave of gettin' no share in the fight:
But, by two o'clock in the afternoon, we were most of us near to our stations,
And the "'Possum," by Adm'ral's orders, began to commence operations.

She had made a hawser fast to one of them spiked iron piles,
And she tugged and tugged at the thing, and she blew off steam meanwhiles:
It set me laughin' to see her, for I couldn't help thinkin', in truth,
It was just like a little dentist along of a stubborn tooth.
But the pile came out at last, and gave the "'Possum" room,
And she and the "Plover" together moved up to the second boom.

I never saw a lovelier day: the sun was hot, and the sky
Was as dark and deep a kind of blue as the Adm'ral's flag in the "fly";
And when we neared the second boom, and all lay calm and still,
It began to seem 's if the Chinee braves were wantin' in pluck or will.
But, bless you, sir, we did them wrong, for suddenly every gun
In the forts blazed down on our little craft;—there were thirty-five, if one.

They had the range to a nicety, and they looked right down on our decks,
And in half an hour, or little more, the "'Possum" and we were wrecks:
A shot took Cap'en Rason, cuttin' 'im clean in two
(And no wonder, sir, for he stood there right full in the enemy's view).
And another struck a soldier, McKenna was his name,
—A cap'en he was in the Royals,—and served him just the same.

The Adm'ral he was wounded, likewise the second master,
And, as the afternoon wore on, the men fell ever faster.
One shot 'most cleared our for'ard gun of all its proper crew,
And others tore great holes in us, and cut our cables through:
That's why we drifted down a bit,—it wasn't for loss of pluck,—
There wasn't a man on board us but cursed our evil luck.

We drifted, steerin' as we could, until the muddy tide
Carried us down to the "Cormorant," and we lashed to her starboard side.
We were not out of range—no fear!—and we kep' on firin' hard,
For our bow-gun cleared the "Cormorant's" bows, though only by a yard:
But they took the Adm'ral out of us, he bein' very bad,
And 'board us there wasn't comfort nor quiet to be had.

I'm tellin' how the "Plover" fared, but I won't forget the rest,
For every single craft engaged did just as much her best:
The "Lee" and "Kestrel," sadly mauled, were sunk by the Chinee shot;
And the "'Possum" had been ordered where the fire was not so hot:
Yet the action hadn't slackened much, except on the Chinee side,
And it looked as if a victory might even then betide.

At half-past four, or thereabouts, as near as I could learn,
A double-banked cutter came 'longside, with the Stars and Stripes at the stern.
Flag-officer Tatnall, burly and tanned, was sittin', as usual, aft,
And behind him sat his cox'en, my pal of the 'Merican craft.
They came to our starboard gangway, and, just as they happened to come,
Blowed if some Chinee gunner didn't manage to hull my chum.

I thought to myself, "Why neutral folks, as hasn't no business here,
Should be pullin' about in this storm of shot is a point as isn't clear;"
But, when old Tatnall climbed on board, and I heard what he'd to say,
I began to look at the pullin' about in a different kind of way:
For he asked them to take him to Adm'ral Hope (which, in course, our officers soon did),
And he said as he trusted he might be of use in removin' and tendin' the wounded.

He crossed our deck to the "Cormorant," where our Admiral's flag was flyin',
And he left his cutter full of men alongside idly lyin';
And I saw the 'Mericans' eyes on us, as we loaded and fired as commanded
(We were fit to drop from weariness, besides bein' so short-handed);
And one says, "Bill, while we sets down here we does what we didn't oughter:
I'm going to help them blokes up there, for blood is thicker than water."

So first that one, and then some more, slipped shyly aboard the "Plover,"
And did a job for the dear old flag as was blowin' out ragged above her:
They didn't say much, and they made no fuss, and I scarce know how it was done,
But, upon my word, an American crew was presently workin' our gun:
And so we rested a welcome spell till Tatnall, comin' agen,
Called out, with a rougish look in his eyes, "This ain't neutrality, men!"

He'd been to yarn with Adm'ral Hope, and he'd said there something too
'Bout blood bein' thicker than water: and, no doubt, he'd a liked to do
What his boat's crew did without askin', if only he'd felt so free,
—I mean, to have a slam with us at the yallow-faced Chinee:—
But, in course, it wouldn't have been the thing, and he couldn't do less than say,
"Come, come, my men, you must quit that gun!" in a mock indignant way.

Ay! that old man was a good un: and when the assault had failed,—
For we tried to carry the forts that night, but the walls could not be scaled,—
He sent his little steamer, a craft called the Toey-whan,
To help our boats with the wounded, and he thus saved many a man.
It wasn't the business of neutrals: he might have kept apart:
Nobody wouldn't have blamed him—only his kindly heart.

And that's why I draw the line when I hear our ridic'lous bluster
'Bout furriners bein' all alike,—not up to the British muster.
There's furriners as are furriners, and there's furriners as ain't
(I've met a sight of the first sort, and there's some as would rile a saint),
But of furriners as ain't furriners, the only ones I know
Are the Yankee sort as stood by us that time in the River Pei-ho.

WM. LAIRD CLOWES.

Some Texas Stories.

(*From the Galveston Daily News.*)

CHARACTERISTIC OF LIFE IN PARTS OF THE LONE STAR STATE.

SENATOR Perry J. Lewis, who represents the "Free State of Bexar" in the Texas House of Lords, tells a story on Congressman Joe Bailey, for which, however, he quotes Senator A. M. Carter, of Fort Worth, as authority.

"One day," said Lewis, "Carter and Joe Bailey were standing on the street when they saw approaching them a darky mounted on a frisky and spirited horse, whose fine appearance caught the fancy of Carter, who is a lover of fine horseflesh. Carter hailed the darky and remarked,—

"'That's a pretty spirited animal you are riding, old man; is he a good runner?'

"'Well, no, sah, he isn't much of a runnin' hoss,' replied the rider.

"'Oh, then, he is a good trotter, I suppose,' remarked Carter.

"'No, sah, he ain't no trotter, neither,' said Sciplo Africanus.

"'Oh, I see,' ejaculated Carter, 'he is a number-one pacer.'

"'No, sah, dis hoss ain't no trotter, nor he ain't no pacer, needer.'

"'Well, what is he fit for, anyhow?' asked Carter.

"'Just ter prance aroun' an' look fine, boss,' replied the darky, 'an' dat's why I has outen a compliment named him arter Marse Joe Bailey, dar.'"

Judge W. W. Walling, who has been holding court out in the late Judge Marr's old district under a special appointment by the governor, tells a characteristic story of Marr. The latter, though a stickler for the dignity of the bench, was a great pipe-smoker, and allowed the attorneys the privilege of smoking in court. On one occasion he was trying a murder case at Carrizo Springs, in which there was much suppressed excitement and so much bad feeling that it was feared trouble might break out at any moment. Late one

afternoon, while the opposing counsel were arguing the case and the feelings of the spectators were wrought up to the highest pitch, a solid old citizen sitting just under the judge's stand deliberately filled his pipe, and with a graceful sweep of his arm drew a parlor-match across his jeans pants-leg in such a fashion as to light it with a loud, sharp crack. The Court and jury were startled, and everybody looked around in a startled manner, as if expecting a general fusilade to follow, whereupon Marr quickly apprehended the situation and rebuked the pipe-smoker about as follows:

"Gentlemen, the Court tolerates smoking in the court-room. In fact, the Court smokes itself, but it must draw the line at gentlemen lighting their pipes with their six-shooters."

A gentleman from Rio Grande City was in San Antonio a few days ago, and in conversation with the *News* correspondent about the Starr County drouth sufferers, said,—

"We have not made a great success collecting funds for relief purposes. Judge J. W. Munroe, of our town, was sent out as a committee of one to solicit aid. We now realize that we made a great mistake in selecting him, not that he lacked the zeal, but for other reasons. He weighs over two hundred pounds, and is probably the best-fed man on the Rio Grande border, and when people looked at him and heard his little story about people starving in his county, they just gave him the laugh. After canvassing a week without raising a cent, we called him in and sent out another man whose appearance did not belie his words."

Many amusing stories are told of Roy Bean, the famous justice of the peace at Langtry. He is a unique type of a rough frontiersman, with good, hard sense, and there is no red tape about the justice he deals out. On one occasion he was called to hold an inquest on a dead man at Pointed Cave. Getting the witnesses together, he said to them, "Stand up, —— —— you, and be sworn." They stood up, and this was the oath he administered to them:

"You solemnly swear that the testimony in this case, in which the State of Texas is plaintiff and the dead fellow here is defendant, shall be the truth, the whole truth, and nothing but the truth, so help you God. Sit down, —— you."

On another occasion he was examining a witness who had a cigarette in his mouth, and one of the bystanders called the justice's attention to that fact.

"I don't see why he can't lie just as well with a cigarette in his mouth as out of it," replied Judge Bean, as he continued the questioning.

He was called once to hold an inquest over a man found dead. Among the effects of the deceased were fifty-three dollars and a six-shooter. As funerals were cheap at Langtry in those days, and there was more than enough money on the body to bury it, the question of what disposition to make of the funds was soon solved by the justice fining the deceased for carrying concealed weapons the sum remaining after the interment had been paid for.

Judge Charles Merritt Barnes, the local justice who made himself famous by overruling the Supreme Court and deciding the Sunday law unconstitutional, is a jolly good fellow, and for years before his elevation to the woolsack was a local reporter. His first case was a minor civil suit furiously contested by the opposing counsel, and, after listening patiently to all the lawyers had to say, he turned to the jury and charged them,—

"Gentlemen of the Jury: You have heard the argument of the counsel for the plaintiff; if you believe what he says, you will find a verdict for the plaintiff. You have heard the argument for the defendant; if you believe what he says, you will find a verdict for the defendant. But, if you believe as I do, I'll be blowed if I know what your verdict will be. Take the case."

Reverie

THE red sun sets in a sea of blood,
Night's purple shades the sky,
The black seals leap in the rolling flood,
And the hungry sea birds cry.

Its Fame Will Live.

STATUE OF THE REPUBLIC
COURT OF HONOR
WORLD'S COLUMBIAN
EXPOSITION.

The World's Columbian Exposition marked the climax of human achievement. It will live in memory of the crowning glory of modern times. No other development of the closing century can compare with it in practical benefit to mankind.

Who that exhibited is not proud of it? Who that failed to exhibit does not regret the omission? The former are the people of to-day. The latter are relics of the past.

No honor so high as that embodied in an award at the fair. Competition was world-wide, the fruits of ripest experience and noblest endeavors were submitted for examination.

Honest tribunals, composed of eminent scientists, examined and passed upon the claims of exhibitors. Their judgement based on inquiry and justice, proves conclusively the value of any article they commend.

Their approval was stamped on

Dr. Price's Cream Baking Powder

It received the highest award at the fair from a jury headed by the Chief Chemist of the U. S. Department of Agriculture. Dr. Price's was officially commended for highest leavening power, purity, keeping qualities and general excellence.

MARIAN LOUISE BOWKER, 2 years 6 months, and HAROLD L. BOWKER, 4 years and 7 months.

THE MELLIN'S FOOD CHILDREN everywhere are our best advertisement—with their sound bodies, straight limbs, plump cheeks, bright eyes, and fresh clear faces, they are the highest types of healthy, happy childhood.

Our book for the instruction of mothers sent *free* on application.
Doliber-Goodale Co., Boston, Mass.

Like a voice from the past or a siren's song,
Faint through the mist and spray,
Over a soul that is weary and sad,
Comes the memory of a day,—
A haunting vision of words and deeds
Done in the distant past,
'Mid smiles and blushes and drooping lids,
And vows that were not to last.
Out of the turbulent, watery, vast
Heart of the sea is this vision cast;
And the soul stands silently longing alone
For the peace of the dead, and the graven stone.

The day is over, the sun has set;
The shadows embrace the deep;
Pray that oblivion come to the soul,
And that memory fall asleep.

A. H. S.

The Naval War College.

(*From the New York Sun.*)

THE ADVANTAGES IT OFFERS TO THE SERVICE AND COAST DEFENSE.

THE opening of this year's session of the school for naval officers on Coaster's Harbor Island has been accomplished under gratifying circumstances. The honors which for weeks together have been paid in England to Captain Mahan have all reflected lustre on our Naval War College, because, as he has explained, the works which have gained him so high a reputation were the direct result of his lectures there. It was felt at first to be a hard blow to the institution that an officer of such special abilities as an instructor should be taken away from it to perform his tour of sea duty; but it turns out that the voyage of the "Chicago" has directed upon the college an amount of public attention, both home and foreign, such as, perhaps, it had never before received. Happily, also, in Captain H. C. Taylor it has found a worthy successor, as president, to Captain Mahan: and thus the adequate continuance of the latter's work is assured.

Indeed, it is contemplated to give the institution additional usefulness, if the means are furnished, in an amount of practical out-door work hitherto not attempted. Tactical exercises and reconnoissances in steam launches will, it is hoped, be carried on upon an extended scale. An important war problem has been fixed upon as a central feature in the year's work, and since this problem is chiefly concerned with the supposed operations of an enemy in Narragansett Bay, Long Island Sound, and other waters adjacent to Newport, the steam launch work of the year can be directly connected with the study and illustration of the year's problem.

Mr. McAdoo put very well, in his inaugural address to the new class, the considerations which make this institution valuable. As the prospect of a general beating of swords into plowshares is still remote, the study of the art of war is a national necessity. But it so happens, as the assistant secretary says, that improvements in ships and guns have gone on with such rapidity and to such an extent that it is difficult to forecast the lessons which a great naval war would teach. The true relative values of battleships, coast-defenders, and torpedo craft, and of speed, battery power, and steaming radius, must be put to the test of experience. Meanwhile what is clear is that a mastery of the principles of naval strategy and tactics must be of the highest importance, whatever material the commander has to work with. Mr. McAdoo also points out that, in addition to the country's dependence on coast defense, as "our Achilles's heel is at the water's edge," and in addition to our mission in North America, we are "driven by inexorable circumstances into a relationship towards the whole South American Continent" which begets duties and responsibilities not to be avoided. Frequently of late years the need of a good knowledge of international law on the part of our naval commanders has been shown by important events in the republics of Central and South America, and this is a branch of the instruction to be furnished hereafter at the War College.

The present class for the session consists of ten commanders, two lieutenant-commanders, seven lieutenants, and two ensigns, with one captain of the marine corps. Two of these officers are of the

Swedish navy. The aim has not been to secure large classes, but only a suitable number of such officers as can be detailed without encroaching upon other duties. That the institution has a sphere of its own quite apart from the coarse at Annapolis is very clear. It supplements the latter as certain army schools supplement the coarse at West Point. Even were there nothing else to recommend it its value in keeping up the studies of naval officers after graduation, and in both stimulating and aiding them to hold their own with naval advances in other countries, would be of high value. But, in addition, the main subject considered, namely, the art of naval warfare, is of the highest consequence, especially when studied by officers who have advanced beyond the preliminary stage of education given to the young cadets at Annapolis.

The characteristic of modern warfare, naval as well as military, is the celerity with which it is conducted in the effort to gain a decisive advantage before the enemy can make full use of his resources. This policy becomes the easier from the use of steam power as well as from the destructiveness of modern weapons. It results from this fact that it will no longer do to study the theory of war only during the progress of operations, and to expect to gain one's knowledge as the result of experience. The aphorism in regard to preparing for war in time of peace has never had more force than in these days of rapid operations and overwhelming concentrations of forces. Among such preparations a foremost place must be given to questions of tactics and strategy, in order that a commander may act promptly from a habit of mind and an accumulated stock of knowledge derived from the previous consideration of just such questions as confront him in the actual conduct of a campaign or a battle. In our own navy this matter becomes still more important as the vessels are so few that squadron tactics are exceptional. Other nations have their annual fleet manœuvres, but our vessels generally cruise individually, save on rare occasions like the naval review of last year, or when the ships on the North Atlantic station assemble for squadron manœuvres. This lack makes all the more valuable the course of instruction and practice given at the War College.

But besides these considerations, the fact that so much of the work at this institution concerns itself with problems of coast defense, under conditions resembling as closely as can be forecast those which might come up in the actual experience of the country, gives a special interest to its sessions. The site of the college is at one of the great strategic points of the seaboard, being just beyond the entrance to Long Island Sound, and hence at the eastern approach to the chief commercial city of the United States. Thus the study of the waters nearest the institution and of the various questions, strategical and tactical, suggested by them, accumulates a stock of information and of investigation relating to the most important of practical naval problems for the country.

It must be confessed that the Naval War College has not always had an easy career. Two years ago it recommenced operations after a period of suspension, resulting from official neglect and lack of appreciation. More than once it has been threatened with suppression. But now the promise, at least, is that of a continuance in its career of usefulness, and perhaps in the future the practice manœuvres of the North Atlantic squadron may be so combined with its course as still further to augment its practical value.